

'CONCHOLOGIA ICONICA: 3'

OR,

ILLUSTRATIONS

OF THE

SHELLS OF MOLLUSCOUS ANIMALS.

VOL. VI.

CONTAINING MONOGRAPHS OF THE GENERA

VOLUTA.
FISSURELLA.
PARTULA.
ACHATINELLA.

ARTEMIS.,
LUCINA.
HEMIPLECTEN.
OLIVA.

STROMBUS.
PTEROCERA.
ROSTELLARIA.
STRUTHIOLARIA.

BY

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"Almighty Cause! 'tis thy preserving care,
'That keeps thy works for ever fresh and fair:
Hence life acknowledges its glorious cause,
And matter owns its great disposer's laws;
Hence flow the forms and properties of things;
Hence rises harmony and order springs."—*Boysse*.

~~8002~~



LONDON:

REEVE AND BENHAM, HENRIETTA STREET, COVENT GARDEN.

1851.

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MONOGRAPH

OF THE GENUS

VOLUTA.

“ A convoluted shell,
In frolic placed upon my shallop's side :—
A wondrous labyrinth where erst did dwell
A creature of the Indian seas ;—a cell
Fitted for Aphrodite.”—*Robert Hunt.*



1. a.



1. b.



2.



3. a.



3. b.

VOLUTA.

PLATE I.

Genus VOLUTA, Linneus.

Testa ovata vel fusiformis, basi latè emarginata, spirâ nunc brevi, nunc acuminato-exsertâ, apice plerumque plus minus obtusè papillari, interdum tenuè nodulosâ, anfractibus levibus vel tuberculatis, sæpe rudè costatis, interdum autem rarè cancellatis, columellâ fortiter plicatâ, plicis duabus ad quinque, interdum plicis tenuibus numerosis suprâ, aperturâ subamplâ, labro parum incrassato, nunquam crenato. Operculum corneum.

Shell ovate or fusiform, broadly emarginated at the base, spire now short, now acuminately exserted, apex generally more or less obtusely papillary, sometimes finely noduled, whorls smooth or tuberculated, often rudely ribbed, sometimes but rarely cancellated, columella strongly plaited, plaits two to five in number, with sometimes numerous fine plaits above, aperture rather large, lip but little thickened, never crenated. Operculum horny.

The Volutes, termed by an accomplished writer the nobles of Testacea, just as Linneus, in his admiration of the Palms, called them the princes of the vegetable world, have always been a favourite genus among collectors. They present an agreeable variety of form, a lively arrangement of colours, and many are of eminent rarity. In its geographical range the genus is peculiarly Australian; and owing to the diffusion of our empire into that distant region, whose fauna and flora are alike marked with a character singularly distinct from those of any other part of the world, we have become possessed of many species, and varieties of species, which, from a country more generally accessible, would have been more equally shared by other European cabinets. Of four-and-twenty species truly ascertained to be from that locality, only seven were known to Lamarck.

In reviewing the various modifications of character, our attention should be first directed to the most permanent feature of the genus,—the plaits of the columella. These are mostly four or five in number, strongly developed and winding round the pillar somewhat obliquely. In some few species they are reduced to two and three in number, and are more rudely constructed. Occasionally they vary a little in different individuals of the same species. In others there are four or five strong plaits, and several finer rudimentary plaits in addition. In form the Volutes are rather inconstant; the same species being sometimes elongately convoluted, the spire proportionably exserted, and sometimes shorter and contracted. The same species is often smooth or tubercled, just as a Cone is smooth or granulated; and the closer and more contracted the growth of an individual, the thicker and more prominently is the shell raised in tubercles. The best characters for the distinction of species are to be found in

certain parts of the shell, such as the apex, the base, the general contour of the body-whorl, its texture and substance, the outline of the aperture, and, above all, in the general design of painting. However much a species may differ in its plan of convolution, the parts referred to are the same; and however variable a species may be in colour, there is but one idea in its pattern and manner of distribution. There is more constancy in the pencil of the Volute, than in the colours of its palette.

In most species of the genus *Voluta* the apex is blunt and papillary; that is, the first two or three whorls, constituting the nucleus of the shell, are smooth and polished, forming what has been called a papilla, before the appearance of any pattern or sculpture. In *V. fulgetrum* and *papillaris* the apex is of a very rude, uncouth growth; in *V. ancilla* it has a peculiar rudely acuminated twist; in *V. festiva* and *rupestris* it has the appearance of a small ivory ball; in *V. scapha* and *imperialis* the apex is very regularly formed, but still broad and obtuse; in *V. vespertilio* and *hiocosa* it is slightly nodulous; in *V. volca* and *reticulata* it is papillary but yet acuminated, the sutures being filled up with enamel; in *V. harpa* and *Guildingii* it is sharp, without any papillary structure; and all these modifications of the apex are accompanied with distinctive features in other parts of the shell, serving to characterize groups, and so to divide the genus into subgenera or sections. Except in the little *V. abyssicola*, the first living representative of a group of fossil species found abundantly in the Tertiary Beds of Great Britain, there is no transverse sculpture in this genus.

Linneus included under the head of *Voluta* all shells having a row of plaits winding round the columella, without considering the nature or habits of their animal occupants. The *Tornatella*, whose shells are entire at the base; the *Auricula*, which, inhabiting the banks of stagnant water, are amphibious; the *Turbinella*, which are canaliculated; and the *Marginella*, whose shell is entirely enveloped by the soft parts, were all associated in the 'Systema Naturæ' under the same generic type. Even the 'Boats' and 'Melons,' 'Les Gondolières' of Lamarck, are now separated from the Volutes, on account of their ventricose form and texture, to form a genus of themselves—*Cymbium*; and some authors have gone so far as to divide this again into *Cymba* and *Melo*.

The animal of *Voluta* differs little from that of *Cymbium*, except in being smaller, less expansile, and more brilliantly coloured. It has the same peculiar lobed dilation of the respiratory siphon, and the eyes, as in that genus, are rather distant from the tentacles. The species hitherto figured in a living state are brilliantly coloured, but there is no similarity between the pattern or colour of the animal and its shell. The *V. vespertilio* is of a bright yellow, marked with longitudinal interrupted black lines;

the *V. angulata*, of a rusty orange, marked with dark spots like a leopard; whilst the *V. nivosa* is purple, marked with unequal black spots edged with white. *V. musica* is the only species in which an operculum has been observed. It is small, oblong, thin, and horny, taken by Mr. Cuming from the living animal.

The geographical distribution of the Volutes is worthy of careful attention. Of sixty-one species at present known, twenty-four, as already stated, inhabit the coast of Australia. In the great eastern ocean, from Java to Japan, only twelve are found. Seven are from different parts of the coast of Africa, including Madagascar, six from South America, east and west, and four inhabit the West Indies and the Gulf of Mexico. Of the remaining eight species the locality is not known.

It may be observed, from this statement, that the Volutes have peculiarly a southern range. Only sixteen species are found north of the equator, whilst there are thirty-seven in the Southern Hemisphere, two of which, *V. Magellanica* and *ancilla*, of large size, inhabit the coast of Patagonia and Tierra del Fuego, in the same parallel of latitude with Scotland and Hudson's Bay in the opposite hemisphere. Yet the Volutes do not approach the Mediterranean or any part of Europe; and it is curious to observe that the fine and beautifully coloured *V. musica* is the only species found in the West Indies, except the little *V. Guildingii*. *V. guttata*, a small species allied to this, inhabits the coast of Honduras; and it is believed on good authority that the celebrated *V. Junonia*, of which only a few specimens are known, is from the Gulf of Mexico, probably the northern shore, near the mouth of the Appalachicola River. Only two small species have been found on the western coast of South America, *V. harpa* and *Cumingii*; and of the African species the precise localities are unknown, excepting the *V. Delessertiana* of Madagascar, and the beautifully cancellated *V. abyssicola*, dredged from a bank of dead shells and iron stones, at the depth of 132 fathoms, off the Cape of Good Hope.

Species 1. (Mus. Cuming.)

VOLUTA CUMINGII. *Vol. testā ovato-pyramidalī, crassissima, spirā acuminatā, apice acutā, anfractibus supernē concavo-declivibus, deinde nodulosis, nodulis, in costis tumidis descendētibz, columellā triplicatā, labro incrassato, intus medio subcontracto et obtusē dentato; albidā, cæruleo spadiceoque nebulosā, hic illic interruptē nigro-vittatā, aperturæ fauce aurantiā.*

CUMING'S VOLUTE. Shell ovately pyramidal, very thick, spire acuminate, sharp at the apex, whorls concavely slanting round the upper part, then nodose, nodules descending in swollen ribs, columella three-plaited, lip thickened, a little contracted and obtusely toothed in the middle; whitish, clouded with blue and brown, and filleted here and there in an interrupted manner with black, interior of the aperture orange.

BRODERIP, Pro. Zool. Soc., 1832, p. 33.

Hab. Gulf of Fonseca, San Salvador, Central America (dredged at the depth of nine fathoms); Cuming.

A thick solid shell, in which the columellar plaits are transversely sculptured, and the lip faintly toothed within. Externally the shell is characterized by a row of swollen ribs which are noded round the upper part. The colouring is of a mixed pattern of black, blue, and brown.

Species 2. (Mus. Brit.)

VOLUTA MAGNIFICA. *Vol. testā ovato-ventricosā, tenuiculā, subampliter inflatā, spirā breviusculā, apice papillari, anfractibus levibus, supernē leviter concavo-angulatis, basi subcontractis, columellā quadruplicatā, aperturā patulā, labro simplici, viz incrassatā; fulvescente, ferrugineo-castaneo nebulatā et saturatiore latifasciatā, maculis pallidis transversis lanceolato-angulatis intermittente, columellā aurantio-carneolā.*

THE MAGNIFICENT VOLUTE. Shell ovately ventricose, rather thin, somewhat largely inflated, spire rather short, papillary at the apex, whorls smooth, slightly concavely angled round the upper part, a little contracted at the base, columella four-plaited, aperture wide open, lip simple, scarcely thickened; light fulvous, clouded and more darkly broad-banded with rusty chestnut, leaving transverse lanceolately angled pale spots, columella orange-carnelian.

CHEMNITZ, Conch. Cab. vol. xi. p. 8. pl. 174-5. f. 1693-4.

Hab. Rose Bay, Port Jackson, Australia; Stutchbury.

Well known by Chemnitz's admirable figures, this species remains unapproached by any other. It is of comparatively light growth, and never tubercled.

Species 3. (Mus. Cuming.)

VOLUTA HARPA. *Vol. testā oblongo-ovatā, crassissimā, spirā breviusculā, apice acutē acuminatā, anfractibus levibz vel minutē striatis, convexo-tumidis, longitudinaliter latē superficialiter sulcatis, columellā transversim triplicatā, basi recurvā, aperturā angustā, labro rudē varicoso, intus obtusē dentato; fulvescente-aurantiā, cæruleo-castaneoque undique nebulatā et variegatā.*

THE HARP VOLUTE. Shell oblong-ovate, very thick, spire rather short, sharply acuminate at the apex, whorls smooth or minutely striated, longitudinally broadly superficially grooved, columella transversely three-plaited, recurved at the base, aperture narrow, lip rudely varicose, obtusely toothed; fulvous orange, clouded and variegated throughout with blue and chestnut.

BARNES, Annals of the Lyceum Nat. Hist. of New York, vol. i. p. 139. pl. 9. f. 4.

Hab. St. Elena, West Columbia (from sandy mud at the depth of eight fathoms); Cuming.

A sharply ridged acuminate species, of the same type, colour, and general aspect, as *V. Cumingii*.



4. a.



4. c.



4. b.



VOLUTA.

PLATE II.

Species 4. (Fig. a, b, d, Mus. Cuming; Fig. c, Mus. Brit.)

VOLUTA AULICA. *Vol. testā oblongo-ovata, crassa, spirā breviusculā, subæsertā, apice papillam muticam subamplam formante, anfractibus subtilissimè striatis, supernè declivibus, sæpissimè leviter angulatis, ad angulum tuberculatis, tuberculis compressis, paululum descendētibz, interdum spinoso-squamatis, columellā fortiter quadruplicatā, aperturā longiusculā, labro simplici; pallidè aurantio-carneolā, lineis tenuibus longitudinalibus maculisque grandibus coccineo-rufis variè pictā, interdum latifusciatā et variegatā, maculis perpaucis nigerimo-fuscis.*

THE COURTIER VOLUTE. Shell oblong-ovate, thick, spire rather short, somewhat exerted, forming a rather large smooth papilla, whorls very finely striated, slanting round the upper part, most frequently slightly angled, tubercled at the angle, tubercles compressed, a little descending, sometimes spinosely squamate, columella strongly four-plaited, aperture rather long, ~~is~~ simple; pale orange-flesh tinged, variously painted with scarlet-red blotches and fine longitudinal lines, banded and mottled, with a few black spots.

SOLANDER. Tankerville Catalogue, App. p. 29.
pl. 3.

Hab. Sooloo Archipelago, Cuming.

This eminently beautiful species has been known for many years by a specimen contained in the celebrated museum of the last century belonging to the Duchess of Portland, described in the Portland Catalogue as follows, by Dr. Solander, a Swedish naturalist and pupil of Linnæus, who, upon coming to this country, accompanied Sir Joseph Banks in his voyage round the world with Capt. Cook, and was subsequently employed at the British Museum in arranging the valuable collections of natural history resulting from their researches. "No. 4021. *Voluta aulica*, a beautiful red-clouded species of the Wild Music kind, its country unknown, unique." A description in Latin may also be found among the Banksian manuscripts in the British Museum. This specimen passed from the Portland Museum into that of M. Calonne, then into the collections of the Earl of Tankerville and of Mr. Broderip, and lastly into that of our national museum, where it remained unique until the return of Mr. Cuming from his voyage among the Philippine Islands, during which he obtained several magnificent specimens from the Sooloo Archipelago, mostly differing from the original one in being tuberculated. Of these Mr. Broderip characterized

six new varieties in the Proceedings of the Zoological Society for 1842. The accompanying figures, representing the most remarkable, were described by Mr. Broderip as follows:—

Fig. 4 a.

"Nodulous, whitish, lined with very close-set delicate pale yellowish undulated lines; body-whorl girt by two broad yellowish-red bands mottled finely with the ground colour. The upper band is bordered above with a row of rich dark-brown spots approaching closely to black, each spot being placed upon a nodule; the lower edge of this band is serrated as it were, and each of the teeth is marked with a spot immediately under the upper spots, but more dashed and somewhat less intense. The upper edge of the lower band is marked in a similar manner, but the spots are less defined. Above the shoulder of the body-whorl is a band of similar colour, with its lower edge dashed with markings of the same colour as those which ornament the other bands, and at similar intervals. Two similarly coloured spots appear below the third and fourth nodule of the spire just above the suture of the body-whorl, which suture almost hides one below the second of those nodules counting from the edge of the lip. Upper part of the spiral whorls coloured after the same pattern, and brought out by the pale ground-colour of the lower part. Apex yellowish-red."

Duly inspired by the novelty of the specimen and its lovely arrangement of colours, Mr. Broderip adds, "This description will convey a very faint notion of one of the most beautiful shells I ever saw."

Fig. 4 b.

"Flesh-coloured, nodulous, lined longitudinally with close-set, red, somewhat undulated lines, mottled here and there with white, girt by two interrupted rich red bands, spire mottled with red and white, apex coral-red."

Fig. 4 c.

The original specimen of the Portland Collection, now in the British Museum, devoid of tubercles and painted with large flakes of a dull brick-red colour.

Fig. 4 d.

"Bluntly but highly nodulous on the back, the nodules on the lower side rather sharper. Whitish, lined longitudinally with close-set undulated livid lines, blotched with clouds and dashes of livid red. A broad pale band girts the body-whorl below the middle. Apex reddish-white."





5. a.



5. b.



6.



7. a.



7. b.

VOLUTA.

PLATE III.

Species 5. (Mus. Cuming.)

VOLUTA DELESSERTIANA. *Vol. testā fusiformi-oblongā, basi subrecurvā, spirā acuminatā, anfractibus longitudinaliter lyrato-costatis, costis numerosis, angustis, acutiusculis, subflexuosis, interstitiis striatis, transversim obsolete pertuso-sulcatis, columellā subarcuatā, basi triplicatā, plicis numerosis tenuibus filiformibus suprà exsculptā, aperturā oblongo-ovatā, labro incrassato, varicoso, margine acuto; carneā, aurantio-rufo profusè tinctā, lineis castaneis et rufis transversim notatā, aperturæ fauce albā.*

DELESSERT'S VOLUTE. Shell fusiformly oblong, slightly recurved at the base, spire acuminate, apex sharp, whorls longitudinally lyrate-ribbed, ribs numerous, narrow, rather sharp, somewhat flexuous, interstices striated, transversely obsolete marked with faint prickled grooves, columella slightly arched, three-plaited at the base, with numerous fine thread-like plaits above, aperture oblong-ovate, lip thickened, varicose, sharp at the edge; flesh-coloured, profusely stained with orange-red, transversely marked with red and chestnut lines, interior of the aperture white.

PETIT, Magasin de Zoologie, 1842, pl. 57.

Hab. Tiger Bay, Madagascar.

Distinguished from the *V. mitriformis*, to which it is the nearest allied species, by its more acuminate growth, narrower and more numerous ribs, and bright orange-red colour.

Species 6. (Mus. Cuming.)

VOLUTA FUSIFORMIS. *Vol. testā subelongato-fusiformi, basi contractā et subampliter emarginatā, spirā acuminatā, apice papillari, anfractibus supernè declivibus, deinde tumidiusculis, levibus, sub lente minutè decussatim striatis, columellā tri-quadruplicatā, plicis perobliquis, inconspicuis, aperturā subangustā, labro tenuiculo, parum reflexo; fuscescente-albā, lineis pallidè castaneis, triangulariter configuratis, laxè reticulatis, columellā et aperturæ fauce aurantio-carneolā.*

THE SPINDLE-SHAPED VOLUTE. Shell somewhat elongately fusiform, contracted and rather largely emarginated at the base, spire acuminate, papillary at the apex, whorls slanting round the upper part, then a little swollen, smooth, minutely decussately

plaits very oblique, inconspicuous, aperture rather narrow, lip rather thin, but little reflected; brownish white, loosely reticulated with light chestnut triangularly configured lines, columella and interior of the aperture orange-carnelion.

SWAINSON, Appendix to Bligh Catalogue (not of Kiener).

Voluta Sowerbyi (pars), Kiener.

Hab. Australia.

It has been remarked that this beautiful species is scarcely distinguishable from *V. papillaris*, but a comparison of the figures of each in this monograph, will show that, independent of form, they are characterized by a very different design of painting. The apex is much less papillary in the species under consideration, and the shell is uniformly larger, and of a more attenuated growth. The pattern consists merely of a loose irregular net-work of light chestnut, not disposed in bands of clouded blotches, nor exhibiting any sharply-defined triangular light spots.

Species 7. (Mus. Cuming.)

VOLUTA MITRÆFORMIS. *Vol. testā fusiformi-ovatā, spirā subacuminatā, anfractibus longitudinaliter lyrato-costatis, costis obtusis, subplano-convexis, interstitiis striatis, columellā basi triplicatā, plicis numerosis tenuibus filiformibus suprà exsculptā, aperturā oblongo-ovatā, labro incrassato, varicoso; albā, maculis purpureo-castaneis fasciatim pictā, interstitiis lineis fuscis tenuibus transversim notatis, aperturā albā.*

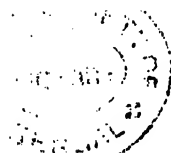
THE MITRE-SHAPED VOLUTE. Shell fusiformly ovate, spire rather acuminate, whorls longitudinally lyrate-ribbed, ribs obtuse, rather flatly convex, interstices striated, columella three-plaited at the base, with numerous fine thread-like plaits above, aperture oblong-ovate, lip thickened, varicose; whitish, painted with blotches of purplish chestnut, interstices marked transversely with fine brown lines, aperture whitish.

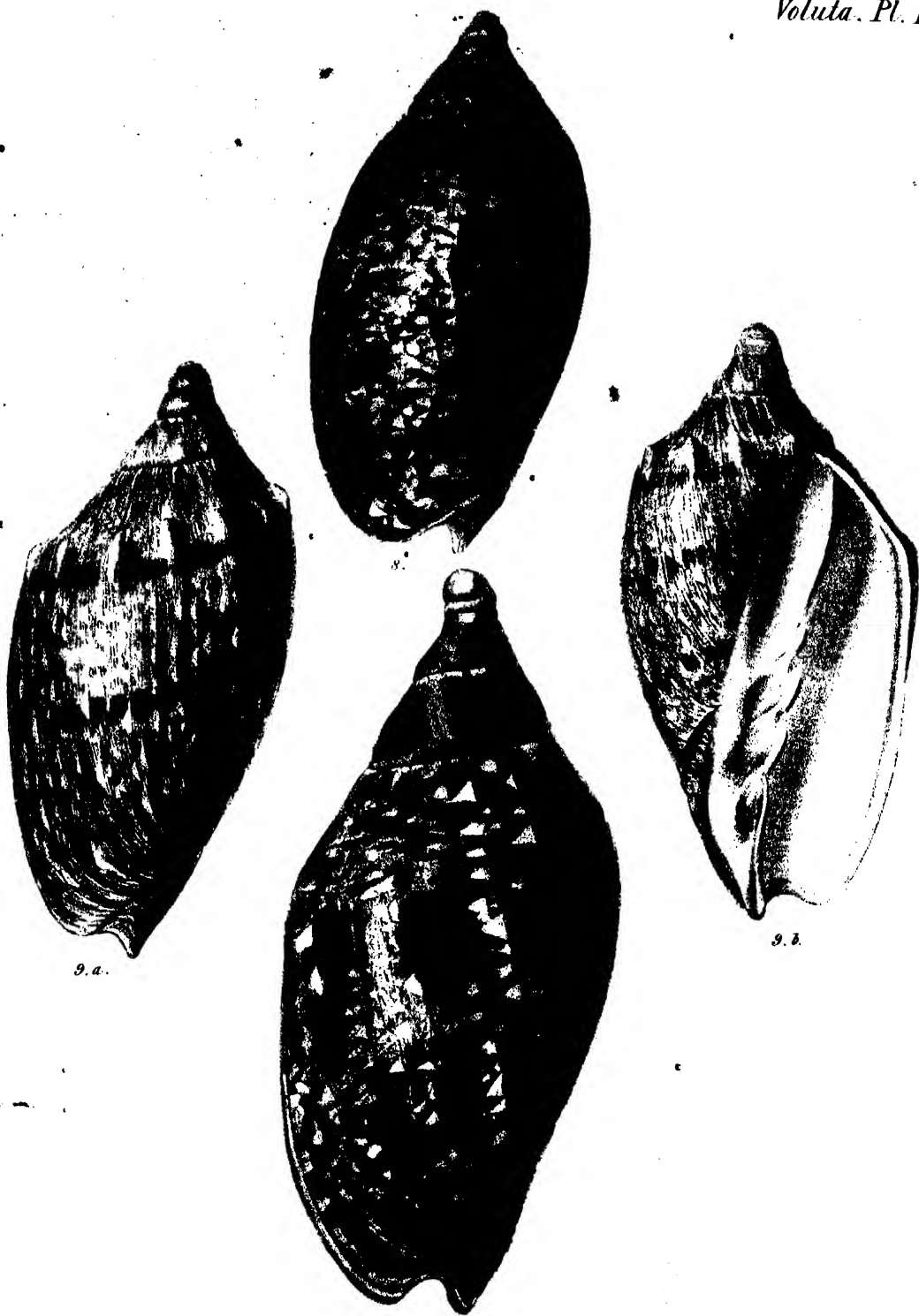
LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. 10. p. 404.

Voluta multicostata, Broderip.

Hab. Australia.

This species is less sharply acuminate than the *V. Delessertiana*, and the ribs are broader and about one-fourth less in number. The painting is very different, both in colour and design.





VOLUTA.

PLATE IV.

Species 8. (Mus. Cuming.)

VOLUTA RUTILA. *Vol. testâ ovatâ, utrinque attenuatâ, crassiusculâ, spirâ brevi, apice papillam amplam, obsolete nodulosam, formante, anfractibus levibus, supernè declivibus, interdum, autem rarò, tuberculatis, columellâ subarcuatâ, quadripliatâ, aperturâ elongato-ovatâ, labro simplici; carneo-alicante, sanguineo-rubro creberrimè confusè trigono-maculatâ et nebulatâ, et subobscurè saturatè trifasciatâ.*

THE BLOOD-RED VOLUTE. Shell ovate, attenuated at both ends, rather thick, spire short, forming a large obsoletely nodulous papilla, whorls smooth, slanting round the upper part, sometimes, but rarely, tubercled, columella slightly arched, four-plaited, aperture elongately ovate, lip simple; flesh-white, very closely confusedly triangularly blotched and clouded with blood-red, and rather obscurely deeper-coloured in three bands.

BRODERIP, Zoological Journal, vol. ii. p. 30. pl. 3.

Hab. North-east Coast of Australia; Jukes.

The painting of this species does not consist of fine hair lines and blotches of scarlet-red, as in the *V. aulica*, but of a confusedly mottled mass of deep blood-red colouring, forming numerous obscure triangular open patches, and three indistinct bands.

Species 9. (Mus. Cuming.)

VOLUTA INNEXA. *Vol. testâ oblongo-ovatâ, spirâ breviusculâ, apice papillam subamplam nodulosam formante, anfractibus levibus, supernè declivibus, leviter angulatis, ad angulum nodoso-tuberculatis, columellâ fortiter quadripliatâ; carneo-albâ, lineis tenuibus coccineo-fuscescentibus undique longitudinaliter subtilissimè innexâ, fasciis angustis tribus saturatioribus.*

THE KNITTED VOLUTE. Shell oblong-ovate, spire rather short, forming a rather large nodulous papilla at the apex, whorls smooth, slanting round the upper part and slightly angled, nodosely tubercled at the angle, columella strongly four-plaited; flesh-white, longitudinally very finely knitted throughout with fine scarlet-brown lines, with three narrow-darker bands.

Hab. — ?

An undescribed species, of which the locality is unknown. The entire surface is covered with a remarkable fine scarlet-brown net-work, very closely arranged transversely, so that the triangular spots of white, which appear here and there, are more longitudinal than usual, whilst the three bands which are somewhat indistinctly formed by a darker deposit of the colour, are unusually narrow. The specimen having lost a portion of the lip, it is so represented in the accompanying figure.

Species 10. (Mus. Brit.)

VOLUTA PAPILLARIS. *Vol. testâ subfusiformi-ovatâ, crassâ, basi truncatâ, apice valdè papillari, anfractibus levibus, supernè declivibus, deinde tumidiusculis, columellâ rudè tri-quinquepliatâ, callosâ, aperturâ subangustâ, labro incrassato; fulvescente-albâ, fulvo-castaneo reticulatâ et latifasciatâ.*

THE PAPILLARY VOLUTE. Shell somewhat fusiformly ovate, thick, truncated at the base, very papillary at the apex, whorls smooth, slanting round the upper part, then rather swollen, columella rudely three-to five-plaited, callous, aperture rather narrow, lip thickened; fulvous white, reticulated and broadly banded with fulvous chestnut.

SWAINSON, Appendix to Bigh Catalogue.

Voluta Sowerbyi (pars), Kiener.

Hab. Port Lincoln, Australia.

Mr. Swainson named this species *papillona* with the view of drawing attention to the remarkable papillary structure of the apex, but as that word signifies "full of papillæ," it is better rendered *papillaris*. Taking it to refer to the painting, and confounding the species with *V. fusiformis*, M. Kiener has changed the name to do honour to Mr. Sowerby, "because the spots have so rarely the appearance of papillæ." Mr. Sowerby acknowledges the compliment, in language severe but not the less true, by calling it an absurdity. To add to this category of errors, M. Kiener gives the name *V. fusiformis* to Mr. Broderip's *V. Beckii*.





H. a.



H. b.



H. d.



H. c.

VOLUTA.

PLATE V.

Species 11. (Fig. a, b, c, d, Mus. Cuming.)

VOLUTA VESPERTILIO. *Vol. testā ovato-oblongā, crassiusculā, spirā brevi, apice subobtusā, nodulosā, anfractibus levibus, supernè concavo-declivibus, squamato-tuberculatis, tuberculis interdum fortibus, prominentibus, interdum, autem rarè, forè obsoletis, columellā quadripliatā, plicis validibus, aperturā longiusculā, labro medio subcontracto; albidā, aut carneolatā aut fulvescente tinctā, nigricante-olivaceo, vel castaneo, vel cocceo variè reticulatā, apertura fauce carneolo-albā.*

THE BAT VOLUTE. Shell ovately oblong, rather thick, spire short, rather obtuse and nodulous at the apex, whorls smooth, concavely slanting, squamately tubercled, tubercles sometimes strong and prominent, sometimes, but rarely, partially obsolete, columella four-plaited, plaits strong, aperture rather long, lip slightly contracted in the middle; whitish, or flesh-tinted, or fulvous, variously reticulated with blackish olive or chestnut or scarlet, interior of the aperture carnation-white.

LINNÆUS, Syst. Nat. (12th edit.) p. 1494.

Varietates.

Voluta pollis-serpentis, Lamarck.

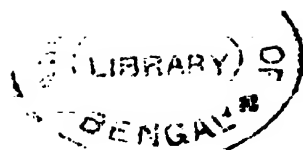
Voluta serpentina, Lamarck.

Voluta mitis, Lamarck.

Hab. Philippine Islands, Moluccas, &c.

Four Lamarckian species are now comprehended in this, distinguished merely by slight modifications of growth and variety of painting. The shell Fig. 11 a represents the type of the species, *V. vespertilio* true. The growth is short and broad; and the tubercles, very strongly developed, are thrown up into hooked scales and laterally compressed. Fig. 11 b is the *V. serpentina* of Lamarck, of more oblong growth, less strongly tubercled, and marked with thin tortuous lines of painting, sometimes dark olive-brown, sometimes bright scarlet as in the specimen figured. Fig. 11 c is a characteristic figure of *V. mitis*, in which the shell obtains an oblong-cylindrical form with the tubercles partially obsolete; and Fig. 11 d is a representation of the *V. pollis-serpentis* in fine state. The colour is more elaborately reticulated, and has little indication of the triangular and tortuous lines which distinguish the other varieties.

Varieties may, however, be cited *ad infinitum*; Mr. Cuming has separated upwards of thirty in his cabinet.





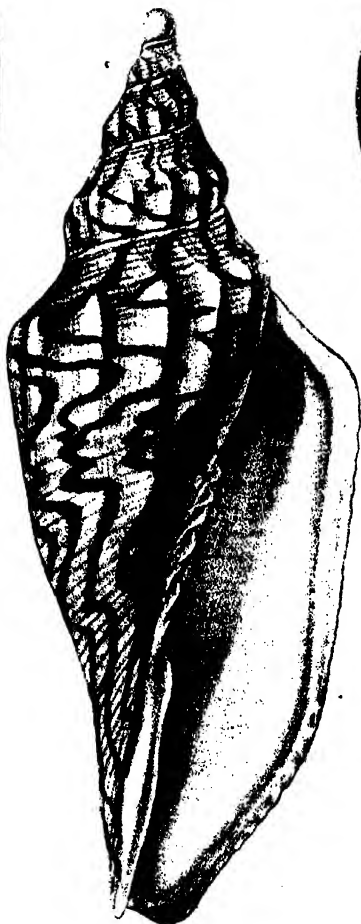
12.



13. a



13. b.



14.

VOLUTA.

PLATE VI.

Species 12. (Mus. Cuming.)

VOLUTA INTERPUNCTA. *Vol. testâ ovatâ, crassâ, spirâ brevi, apice erecto, papillari, anfractibus duobus primis papillam formantibus, tertio quartoque supernè plicato-nodulosis, plicis gradatim evanidis, interstitiis transversim striatis, anfractibus cæteris lævibus, supernè tumidiusculis, interdum, autem raro, obsolete tuberculatis, columellâ sex- ad octo-plicatâ, plicis superioribus parvis, quasi partitis, aperturâ longiusculâ, labro intus subincrassato, spiram versus decurrente; carneo-albicante, punctis linearibus castaneis undique seriatim cingulatâ, strigis purpureo-brunneis interdum longitudinaliter pictâ, basi subaurantiâ.*

THE DOTTED VOLUTE. Shell ovate, thick, spire short, apex erect, papillary, first two whorls forming the papilla, third and fourth whorl plicately noded, the folds gradually vanishing, interstices transversely striated, rest of the whorls smooth, rather swollen round the upper part, sometimes, but rarely, obsolete tubercled, columella six- to eight-plaited, upper plaits small, as if divided, aperture rather long, lip somewhat thickened within, running up a little towards the spire; flesh-white, encircled throughout with linear chestnut dots, sometimes longitudinally painted with purple-brown streaks, base tinged with orange.

MARTYN, Universal Conchologist, vol. iv. pl. 127.

Voluta Indica, Sowerby.

Voluta Lapponica, Linnæus, Lamarck.

Streaked variety. *Voluta undata*, Martyn.

Hab. Ceylon.

I quite agree with Mr. Sowerby in the propriety of abandoning the name *Lapponica* given to this species, indicating a country and climate in which such a mollusk could not by any possibility exist. Instead of inhabiting the arctic shores of Lapland, it is a native of the seas of tropical India. The error did not, however, originate with Linnæus. The species was known before his time to Dutch naturalists, as the '*Lapphoorn*' or '*Lapphoren*,' signifying the Flap-Ear or Dog's Ear Shell: This seems to have been then corrupted into '*Aille Laponne*,' '*Aluta Lapponica*,' '*Voluta Lapponica*,' and Meuschen and Rumphius compounded the name, '*Lapländsche Lapphoorn*.' It only remains a matter of wonder, that, whilst Seba described the species as an exotic shell from India, the error should have remained so long unexplained.

Species 13. (Mus. Cuming.)

VOLUTA FULGETRUM. *Vol. testâ sulfusiformi-oblongâ, tenuiculâ, spirâ exsertâ, apice papillari, anfractibus duobus vel tribus papillam amplam formantibus, cæteris minutissimè striatis, ultimo labrum versus subangulato, columellâ triplicatâ; luteâ vel rufescente-aurantiâ, strigis grandibus castaneis conspicuè fulguratâ, interdum eximè reticulatâ et sparsim maculatâ.*

THE LIGHTNING-FLASH VOLUTE. Shell somewhat fusiformly oblong, rather thin, spire exserted, papillary at the apex, the first two or three whorls forming a large papilla, the rest very minutely striated, last whorl slightly angled towards the lip, columella three-plaited; yellow or reddish-orange, conspicuously lightning-marked with large chestnut streaks, sometimes delicately reticulated and here and there spotted.

BRODERIP, Zoological Journal, vol. ii. p. 35. Sowerby, Tankerville Catalogue, pl. 4 and 5.

Hab. South Australia.

This fine species was first described by Mr. Broderip from a specimen of rather large size in the celebrated Tankerville collection, now in the British Museum. Since that period, several specimens of smaller dimensions, but more richly marked, have been received from South Australia. The painting is somewhat variable, being sometimes represented by a fine net-work of delicate colouring with only a few spots. The spire commences in a large, rudely convoluted papilla, which is in no degree concealed as the shell advances in growth. Another peculiarity of the species is, that the animal distributes a copious deposit of enamel over the body-whorl, not thickened and callous, but of a thin semi-transparent substance, and of a milky aspect, by which the painting is only partially obscured.

Species 14. (Mus. Cuming.)

VOLUTA RUPESTRIS. *Vol. testâ fusiformi, basi contractâ, apice papillari, anfractibus duobus primis papillam eburneam formantibus, tertio quartoque transversim impresso-striatis, longitudinaliter subplicato-costatis, penultimo et ultimo subangulatis, costis ferè evanidis, obsolete nodosis, striis in sulcis subtilibus mutatis, præsertim versus basin, columellâ octo-plicatâ, plicis*

irregularibus; carneo-albicante, strigiis undatis castaneorufa undique fulgurata.

THE BLASTED VOLUTE. Shell fusiform, contracted at the base, papillary at the apex, the first two whorls forming an ivory-like papilla, the third and fourth transversely impressly striated, longitudinally plicately ribbed, penultimate and last whorl slightly angled, with the ribs almost fading, obsoletely noded, striae turned into fine grooves, especially towards the base, columella eight-plaited, plaits irregular; warm flesh-white, marked throughout with waved chestnut-red streaks.

GMELIN, Syst. Nat. p. 3464.

Voluta fulminata, Lamarck.

Fulgoraria Chinensis, Schumacher.

Hab. China.

The *V. rupestris* varies considerably in size, but little in character. Its papillary apex has a peculiar rounded polished ivory appearance. The sculpture of the shell commences with regular longitudinal compressed ribs of rather a superficial character, and transverse impressed striae; the ribs become gradually noded, frequently obsolete, and the striae enlarge into the form of spiral linear grooves.





15.



16. a.



16. b.



17.

VOLUTA.

PLATE VII.

Species 15. (Mus. Cuming.)

VOLUTA NORRISII. *Vol. testâ, subquadrato-ovatâ, ventricosâ, spirâ brevi, apice obtusâ et nodulosâ, anfractibus lævibus, supernè concavo-angulatis, ad angulum spinoso-squamatis, columellâ subarcuatâ, quadriplicatâ; flavidâ et virescente, lineis brevibus nigris in maculis olivaceo-viridibus medio bifasciatâ et supernè tinctâ, arcis inter fasciis olivaceo-viridi nebulatis, maculis lineisque niveis irregularibus sparsim floccatis, columellâ aurantio-carneolâ, aperturæ fauce fuscescente-cinereâ.*

NORRIS'S VOLUTE. Shell somewhat squarely ovate, ventricose, spire short, rather obtuse and noded at the apex, whorls smooth, concavely angled round the upper part, spinosely squamate at the angle, columella slightly arched, four-plaited; yellowish and greenish, two-banded round the middle and stained at the upper part with short blackish lines in olive-green blotches, areas between the bands sparingly flaked with irregular snowy spots and lines, columella orange-carnelion, interior of the aperture brown-ash.

SOWERBY, *Pro. Zool. Soc.*, 1844, p. 150; *Thesaurus Conch.* p. 201. pl. 51. f. 65.

Hab. Dupuch's Island, Australia; Dring.

This species, which is not uncommon, differs constantly from *V. nivosa*, in being of a shorter and broader growth, coronated with sharp spinose scales. It is also characterized by a more confused style of painting, of a peculiar sea-green tint of colouring. The open white flakes of *V. nivosa* are here represented by small broken opaque white lines. The shell is very similar in other respects, but in all the specimens I have seen, the peculiarities above noted are well marked, and apparently of specific importance.

Species 16. (Fig. a and b, Mus. Norris.)

VOLUTA PIPERATA. *Vol. testâ oblongo-ovatâ, crassâ, spirâ breviusculâ, apice subobsoletè nodulosâ, anfractibus lævibus, supernè concavo-declivibus, ad angulum obsoletè tuberculatis, columellâ quadriplicatâ; pallidè carneo-cinerascente, punctis minutis aurantio-fuscis undique creberrimè piperatâ, strigis undulatis olivaceo-nigris, subdistantibus, longitudinaliter fulguratâ,*

fasciis tribus virescente-albis partim obscuratâ, columellâ, basi, et aperturæ fauce vividè aurantio-carneolis.

THE PEPPERED VOLUTE. Shell oblong-ovate, thick, spire rather short, somewhat obsoletely noded at the apex, whorls smooth, concavely slanting round the upper part, obsoletely tubercled at the angle, columella four-plaited; light fleshy-ash, very closely peppered throughout with minute orange-brown dots, longitudinally lightning-marked with rather distant olive-black waved streaks, the colour being partially obscured with three bands of greenish-white, columella, base, and interior of the aperture bright orange-carnelion.

SOWERBY, *Pro. Zool. Soc.*, 1844, p. 150; *Thesaurus Conch.* p. 199. pl. 51. f. 62.

Hab. — ?

The painting of this beautiful species in all its detail, is of too minute a character to be rendered in a figure. The entire surface of the shell is peppered, so to speak, with small orange-brown dots, and over this are a number of rather distant jagged olive-black streaks running in zigzag style from the sutures to the base. This being the design of the painting throughout, about one-half of it is partially obscured at intervals by three bands of greenish-white film, the pattern being seen through it.

The species is at present unique in the collection of Thomas Norris, Esq., to whom I am indebted for this opportunity of figuring it of the natural size.

Species 17. (Mus. Cuming.)

VOLUTA NIVOSA. *Vol. testâ ovato-oblongâ, spirâ breviusculâ, apice subobtusâ et nodulosâ, anfractibus lævibus, supernè declivibus, subangulatis, ad angulum plus minus obscure compressè tuberculatis, infernè subcontractis, columellâ quadriplicatâ; cornutescente-plumbeâ, tuberculis et nodulis pallidis, lineis nigris irregularibus confertis à suturis ad angulum descendentibus, infra lineis nigris irregularibus interruptis nitidè bifasciatâ, arcis inter fasciis maculis niveis sparsim floccatis, columellâ basique aurantio-carneolis, aperturæ fauce sordidè fuscescente-cinereâ.*

THE SNOWY VOLUTE. Shell ovately oblong, spire rather short, somewhat obtuse and noded at the apex, whorls smooth, slanting round the upper part, slightly

angled, more or less obscurely compressly tubercled at the angle, a little contracted towards the lower part, columella four-plaited; bluish lead-colour, tubercles and nodules paler, with irregular close-set black lines descending from the sutures to the angle, beneath neatly banded with irregular interrupted black lines, areas between the bands sparingly flaked with snowy spots, base and columella orange-carnelion, interior of the aperture dull brown-ash.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. 10. p. 389.

Hab. Swan River, Coast of Australia.

This species is frequently seen of a discoloured yellowish hue, instead of the rich lead-blue tint here represented, which is its true character. The tubercles are never absent; they are of an obtuse compressed growth, and not developed into spinose scales as in the *V. Norrisii* and *corona*.

It inhabits the shores of Garden Island, mouth of the Swan River, in great abundance.





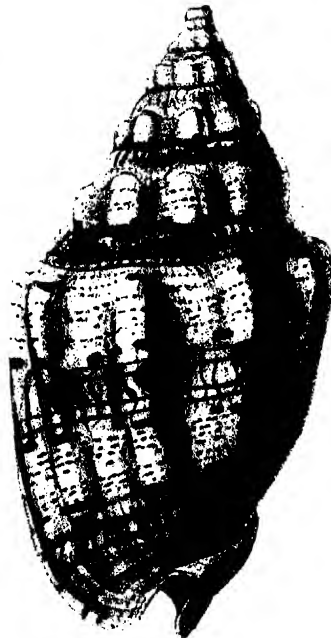
18. a.



18. b.



18. c.



18. d.

VOLUTA.

PLATE VIII.

Species 18. (Fig. *a, b, c, d*, Mus. Cuming, and
Pl. IX. Fig. 18 *e*, Mus. Hudson.)

VOLUTA MUSICA. *Vol. testā ovatā, crassā, basi peculiariter recurvā, spirā nunc breviusculā, nunc exsertā, apice subobtusā; anfractibus levigatis, supernè angulato-declivibus, fortiter tuberculatis, tuberculis in costis plus minus obsoletis descenduntibus; albidā aut fulvescente-carneā, aut castaneo, aut cæruleo, aut roseo, vel aurantio tinctā et nebulatā, lineis fuscis conspicuè trifasciatā, interstitiis lineis subundatis, e suturis descenduntibus, longitudinaliter notatis, areis inter fasciis creberrimè fusco-punctatis, maculis nigris subirregulariter marginalis, aperturā carneo-aurantiā, labro nigro-maculato.*

THE MUSIC VOLUTE. Shell ovate, thick, peculiarly recurved at the base, spire sometimes rather short, sometimes exserted, rather obtuse at the apex; whorls smooth, angularly slanting round the upper part, strongly tubercled, tubercles descending in more or less obsolete ribs; whitish or fulvous-flesh tint, stained and clouded with chestnut, or rose, or blue, or orange, conspicuously encircled with three bands of brown lines, marked longitudinally in the interstices with slightly waved lines descending from the sutures, areas between the bands very closely dotted with brown, and somewhat irregularly edged with black blotches, aperture flesh-orange, lip spotted with black.

LINNEÆUS, Syst. Nat. (12th. edit.) p. 1194.

Varieties.

Voluta chlorosina, Lamarck.

Voluta thiarella, Lamarck.

Voluta carneolata, Lamarck.

Voluta levigata, Lamarck.

Voluta sulcata, Lamarck.

Voluta nodulosa, Lamarck.

Voluta Guinaica, Lamarck.

Voluta Guineensis, Chemnitz.

Voluta plicata, Dillwyn.

Hab. West Indies.

This very beautiful and well-known shell appears to have discoursed most eloquent music to the mind of Lamarck; for under it he has comprehended eight species, indicating so many varieties of one and the same. The richly-coloured specimen of broad and solid growth and prominent tubercles, Fig. 18 *b, c*, may be regarded as the type of the species. *V. chlorosina*, on the authority of M. Kiener, is the same in bad condition. *V. thiarella*, characterized by its elongated growth and pale colouring, is the variety Fig. 18 *d*. *V. Guinaica*, distinguished by its rich violet and brown-clouded colouring, is represented by the variety Fig. 18 *a*. *V. carneolata*, known to collectors by its delicate pink colouring and smaller size, is figured at Pl. IX. Fig. 18 *e*. *V. sulcata* is a light fawn variety, approaching in size and appearance to the last, in which the ribs depending from the tubercles, more or less obsolete in all the varieties, are rather more prominent in this, whilst the shell is not unfrequently granulated. *V. levigata* is founded upon a state of the species the reverse of the preceding, having little indication of ribs or tubercles; and *V. nodulosa*, according to M. Kiener, is a variety in bad condition, probably granulated.

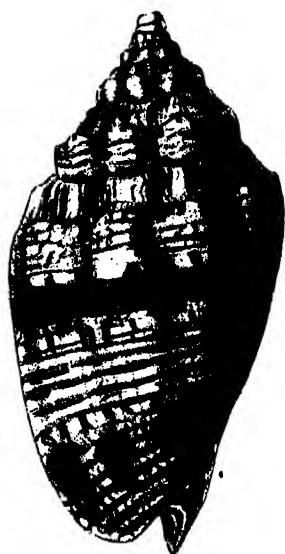
It is almost needless to particularize varieties, excepting truly to show of what these Lamarckian species are constituted, and of which the intermediate states may be seen in the Cumingian and other collections. The same design of painting, consisting of two broad bands of blotched lines, with intermediate areas of dots, pervades the whole; and the tubercles are only the more prominently developed as the shell is less narrowly elongated in growth, arising out of a more contracted plan of convolution.







18. e.



20. a.



19.



20. b.

VOLUTA.

PLATE IX.

Species 19. (Mus. Cuming.)

VOLUTA VIRESCENS. *Vol. testā conico-ovatā, crassiusculā, spirā brevi, apice subacutā, anfractibus transversim crebrè lineari-sulcatis, supernè concavo-angulatis, ad angulum acutè tuberculatis, tuberculis in costis gradatim evanidis descendētib; columellā multiplicatā, plicis irregularibus, aperturā angustā, labro subreflexo; virescente, densè nigro-punctatā, zonis numerosis equidistantibus angustis immaculatis, nisi punctis per paucis nigris majoribus, labro nigro-maculato.*

THE GREENISH VOLUTE. Shell conically ovate, rather thick, spire short, rather sharp at the apex, whorls transversely closely linearly grooved, concavely angled round the upper part, sharply tubercled at the angle, tubercles descending into gradually vanishing ribs, columella many-plaited, plaits irregular, aperture narrow, lip slightly reflected; greenish, thickly black-dotted, with numerous equidistant narrow zones unspotted except by a few black dots of larger size, lip black-spotted.

SOLANDER, Dillwyn, Catalogue of Shells, vol. i. p. 562.

Murex musicalis viridis, Martini.

Voluta polyzonalis, Lamarck.

Voluta fulva, Lamarck.

Voluta pusio, Swainson.

Hab. West Africa.

Dr. Solander's manuscript name for this species was published in Dillwyn's 'Catalogue of Shells' during the progress of Lamarck's 'Animaux sans Vertèbres' two or three years before the appearance of genus *Voluta*, and therefore has priority. Mr. Swainson's *Voluta pusio*, which may be seen in the British Museum, is merely a worn, discoloured specimen of *V. virescens*, so far as it is possible to judge by its similarity of form and the faint traces of marking that remain. Mr. Sowerby has published a figure of it in his 'Thesaurus Conchyliorum,' but the colouring is rather exaggerated. The specimen is in a condition in which no shell ought to be described, ; some new typical peculiarity of form.

Species 20. (Fig. a, Mus. Gubba; Fig. b, Mus. Cuming.)

VOLUTA HEBRÆA. *Vol. testā ovatā vel oblongo-ovatā, crassā, ponderosā, spirā interdum brevi, interdum exsertā, apice subpapillari, anfractibus levibus aut transversim obscurè latis, supernè gibboso-angulatis, plerumque fortiter tuberculatis, columellā fortiter quinqueplicatā, supernè plicis parvis numerosis aut obsoletis; pallide fuscescente-carneā, lineis irregularibus veniformibus transversis et e suturis descendētib; maculisque hieroglyphicis, intensè nigro-castaneis, variè fasciatim pictā, interdum, autem rarè, aurantio-rufa bifasciatā, labro nigro-maculato.*

THE HEBREW VOLUTE. Shell ovate or oblong-ovate, thick, ponderous, spire sometimes short, sometimes exserted, apex somewhat papillary, whorls smooth or transversely obscurely ridged, gibbously angled round the upper part, generally strongly tubercled, columella strongly five-plaited with small plaits above, either numerous or obsolete; light brownish flesh-colour, variously painted in a banded style with irregular vein-like lines, transverse, also descending from the sutures, and hieroglyphic blotches, of very dark chestnut, sometimes but rarely encircled by two bands of orange-red, lip spotted with black.

LINNÆUS, Syst. Nat. (12th. edit.) p. 1194.

Buccinum coronatum, Martyn.

Pale red variety. *Voluta turbinata*, Kiener.

Hab. West Africa.

This fine species varies considerably, with the spire sometimes short, sometimes exserted, in which latter case the tubercles are so much the less prominently developed. It is the 'False Music Shell' of the old conchologists; the *Buccinum musicum spurium* of Seba, *Murex musicalis spurius* of Martini, *Thema musicum Hebraicum* of Klein, and the *Wilde Musyk-hoorn* of the Dutch. None of the varieties have the bands of lines or dots of the true *V. musica*.

Fig. 10 e. (Mus. Hudson.)

The red variety of *V. musica*, referred to in the preceding plate as being Lamarck's *Voluta carneolata*.

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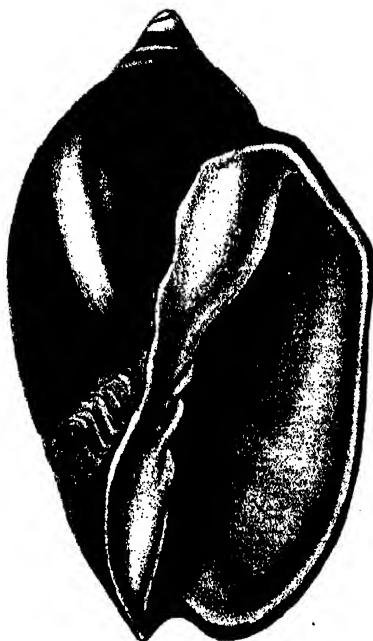
21.



22. a.



22. b.



23.

VOLUTA.

PLATE X.

Species 21. (Mus. Cuming.)

VOLUTA SOPHIA. *Vol. testâ subquadrato-ovatâ, basin versus contractâ, spirâ brevi, apice obtusâ et nodulosâ, anfractibus levibus, supernè concavo-angulatis, ad angulum acutè spinoso-squamatis, columellâ quadriplicatâ, aperturâ subdilatatâ; fulvescente-abbâ, maculis per paucis parvis castaneo-rufis seriatim tinctâ.*

THE SOPHIA VOLUTE. Shell somewhat squarely ovate, contracted towards the base, spire short, obtuse and nodulous at the apex, whorls smooth, concavely angled at the upper part, sharply squamately spinose at the angle, columella four-plaited, aperture somewhat dilated; light fulvous white, stained with rows of chestnut-red spots.

GRAY, *Naturalist's Repository*, the Voyage of the Fly?

Hab. North Queensland, Australia; Jukes.

Closely allied to *V. Norrisii*, it differs in being encircled with faint rows of distant chestnut-red spots, of which there is no trace in that species.

Species 22. (Mus. Crotch.)

VOLUTA EXOPTANDA. *Vol. testâ cylindraceo-oblongâ, sub-Oliveformi, spirâ brevi, conicâ, apice papillari, anfractibus levibus, supernè declivibus, deinde tumidiusculis et gradatim attenuatis, columellâ fortiter quadriplicatâ, aperturâ subangustâ, labro parum incrassato; pallidè roseo-aurantiâ, indistinctè bifasciatâ, lineis subtilibus acutè undulatis castaneo-rufis undique densè promiscuè pictâ, columellâ et aperturâ fauce vividè aurantio-carnæolis.*

THE MUCH-DESIRED VOLUTE. Shell cylindrically oblong, somewhat Olive-shaped, spire short, conical, obtusely papillary at the apex, whorls smooth, slanting round the upper part, then rather swollen, and gradually attenuated, columella strongly four-plaited, aperture rather narrow, lip but little thickened; pale rose-orange, faintly two-banded, densely promiscuously painted throughout with sharply waved fine chestnut red lines, columella and interior of the aperture rich orange-carnelion.

SOWERBY, MS.

Hab. Port Lincoln, South Australia.

This very beautiful new Volute, from the collection of the Rev. W. R. Crotch, remarkably distinct from any species hitherto known, may be regarded as the type of a new section of the genus, partaking of the Cone and Olive form. It is of a delicate orange-roseate hue, crowded throughout with fine sharply zigzag chestnut-red marks, exhibiting two faint bands. The body-whorl is covered with an extremely thin deposit of enamel of a milky hue, by which the painting is only very slightly obscured, whilst the columella and interior of the aperture are of a rich orange-red carnelion. Near the lip the painting suddenly assumes a more exact style of pattern, disposed in triangular reticulations of a darker blueish tint, as if the pencil, so to speak, of the animal had been labouring up to this time in a disturbed condition. It is the only specimen that has been yet seen.

Species 23. (Mus. Crotch.)

VOLUTA FERUSSACI. *Vol. testâ ovatâ, ventricosâ, basi subtruncatâ, spirâ brevi, suturis rudibus, apice papillari, anfractibus levibus, vel liris incrementi rugatis, supernè rotundatis, columellâ subdepressâ, quadriplicatâ, plicâ anticâ validâ, posticâ subobsoleteâ, aperturâ patulâ; sordidè spadiceo-fuscescente.*

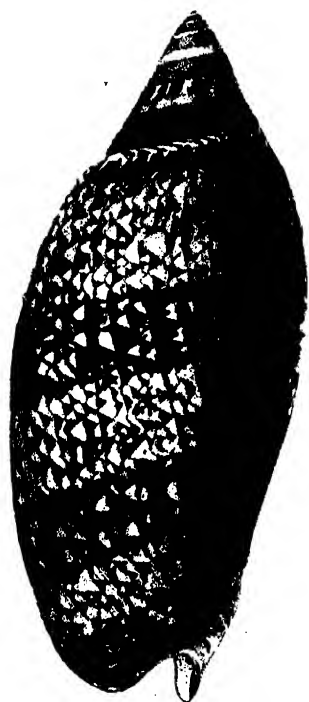
FERUSSAC'S VOLUTE. Shell ovate, rather ventricose, somewhat truncated at the base, spire short, sutures rude, apex papillary, whorls smooth, or roughened with ridges of growth, rounded at the upper part, columella rather depressed, four-plaited, front plait strong, hind plait nearly obsolete, aperture wide open; dull bay brown.

DONOVAN, *Naturalist's Repository*, vol. ii. pl. 67.

Voluta rudis, Gray.

Hab. —?

An extremely rare species, described and figured some five and twenty years since by Mr. Donovan, from a polished specimen, which he states to have been treasured for a long while previous in a private cabinet. It was supposed to have been received from the Strait of Magalhães. The specimen here figured is from the collection of the Rev. W. R. Crotch, and there are two or three in the British Museum, of which the locality is equally unknown.



25 b



26.

VOLUTA.

PLATE XI.

Species 24. (Mus. Cuming.)

VOLUTA VOLVA. *Vol. testā elongato-ovata, utrinque attenuatā, spirā acuminatā, papillari, apice subacutā, anfractibus lævibus, nitentibus, convexis, supernè declivibus, columellā obliquè quadriplicatā, aperturā subangustā, labro viā incrassato; livido-fulvescente-albā, fusciscente obscurè bifasciatā, lineis subtilibus undulatis indistinctè longitudinaliter notatā, spiræ suturis castaneo-fusco partim tinctis et punctatis.*

THE SHUTTLE VOLUTE. Shell elongately ovate, attenuated at each end, spire acuminated, papillary, rather sharp at the apex, whorls smooth, shining, convex, slanting round the upper part, columella obliquely four-plaited, aperture rather narrow, lip but slightly thickened; livid fulvous white, encircled with two obscure light-brown bands, and indistinctly longitudinally marked with fine waved lines, sutures of the spire partially stained and dotted with chestnut-brown.

CHEMNITZ, Conch. Cab. vol. x. p. 143. pl. 148. f. 1389-90.

Volula pallida, Gray.

Hab. Mouth of the Swan River, Australia.

I cannot doubt of this being the *Voluta volva*, confounded by Lamarck with the *Voluta flavicans* under the name *V. volvacea*. The *V. Turneri* of Mr. Gray, represented by Mr. Sowerby as a variety of this species, is certainly distinct, and the shell figured by Mr. Sowerby (Thes. Conch. pl. 53. fig. 94) as another variety, is the type of my *V. reticulata*. The very delicate waved lines of colour which characterize the *V. volva* are more frequently absent or obliterated than present, and are rarely more distinctly marked than in the accompanying figure.

Species 25. (Mus. Dennison.)

VOLUTA RETICULATA. *Vol. testā elongato-ovata, spirā subacuminatā, papillari, apice acutiusculā, anfractibus lævibus, convexis, supernè declivibus, columellā quadriplicatā; fulvescente-albā, fulvo-castaneo ad suturas tinctā et saturatè strigatā, et undique subtiliter trigono-reticulatā, reticulā ad basin et in fasciis duabus saturatè confusā, columellā et aperturā fauce fulvo-castaneis.*

THE RETICULATED VOLUTE. Shell elongately ovate, spire somewhat acuminated, papillary, rather sharp at the apex, whorls smooth, convex, slanting round the upper part, columella four-plaited; fulvous white,

stained and darkly streaked at the sutures, and finely triangularly reticulated throughout with fulvous chestnut, the net-work being darker and confused at the base and in two bands, columella and interior of the aperture fulvous chestnut.

REEVE, Pro. Zool. Soc. 1843, p. 144.

Hab. North of Swan River Settlement, Australia; Dring.

This fine shell, from the collection of Mr. Dennison, is the true type of the species under consideration, described by me on its arrival in the Beagle in 1843. Another specimen, equal in size and not much inferior in colour, is in the collection of Mr. Norris, and a third, of smaller size but richly coloured, in the Cumingian collection, figured inadvertently by Mr. Sowerby as a variety of the preceding species. Besides these, there are three specimens of a very distinct variety, if not specifically distinct, in the collections of Mr. Metcalf, Mr. Gubba, and the British Museum, in which the shell is more ventricose and the net-work of rather a different character, figured by Mr. Sowerby (Thes. Conch. pl. 49. f. 47, 48) as *V. reticulata* true. The dark marks along the sutures are also somewhat different. The specimens are very much worn, but they present a peculiarity of character which may prove to be of some specific importance.

Species 26. (Mus. Cuming.)

VOLUTA UNDULATA. *Vol. testā elongato-ovata, crassa, basi subcontorta, spirā breviusculā, subacuminatā, anfractibus lævibus, supernè declivibus, deinde tumidiusculis, columellā quadriplicatā; ferrugineo-albidā vel eburneā, lineis castaneis flexuosis conspicuè longitudinaliter pictā, columellā et aperturā fauce vividè rufo-aurantiis.*

THE WAVED VOLUTE. Shell elongately ovate, thick, slightly twisted at the base, spire rather short, somewhat acuminated, whorls smooth, slanting round the upper part, then a little swollen, columella four-plaited; rusty or ivory white, conspicuously longitudinally painted with flexuous chestnut lines, columella and interior of the aperture bright red-orange.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 401.

Hab. Tasmania, and Gipp's Land, South Australia.

This well-known species varies from a polished-ivory white to a rusty red-brown, but is always characterized by the same design of longitudinal waved lines.



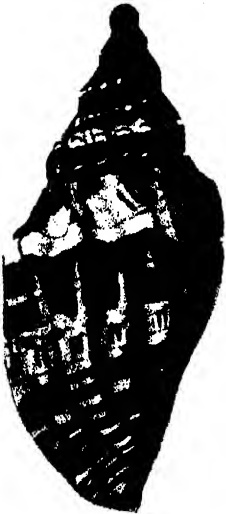
27 a.



27 b.



28 a.



28 b.



28 c.



29 a.



VOLUTA.

PLATE XII.

Species 27. (Mus. Cuming.)

VOLUTA TURNERI. *Vol. testā oblongo-ovalā, basi subtruncatā, spirā breviusculā, apice papillari, vix acuminatā, anfractibus levibus, supernè declivibus, deinde tumidiusculis, columellā quadruplicatā; albā, lineis obliquis subflexuosis castaneis conspicuè pictā, maculis saturatioribus ad suturas, maculis pallidioribus majoribus bifasciatā.*

TURNER'S VOLUTE. Shell oblong-ovate, somewhat truncated, spire rather short, apex papillary and slightly acuminated, whorls smooth, slanting round the upper part, then rather swollen, columella four-plaited; white, conspicuously painted with slightly flexuous oblique chestnut lines, with darker spots at the sutures, and encircled by two bands of faint spots of larger size.

GRAY, Griffith's Cuvier's Animal Kingdom, Moll. Pl. 40. f. 1.

Hab. South Australia.

The oblique strong linear painting which characterizes this species must not be confounded with the faint longitudinal waved lines which are sometimes present in the *V. volea* (*V. pallida*, Gray, of which Mr. Sowerby considers this a variety). The bands are formed of two rows of faint under-colour in blotches, not of ribbon-like painting, and the shell is uniformly of smaller size.

Species 28. (Fig. a. Mus. Crotch; Fig. b, c. Mus. Dennison.)

VOLUTA FESTIVA. *Vol. testā ovato-fusiformi, tenuiculā, ætate crassiore, spirā exsertā, pyramidalī, apice rudè globoso-papillari, anfractibus levibus, basi striatis, supernè angulatis, longitudinaliter costatis, costis tumidiusculis, equidistantibus, juxta suturas obsoletis, ad angulum compressè tuberculatis, columellā prope basin rudè triplicatā, quarum plicā medianā majore, plicis numerosis tenuibus filiformibus, partim obsoletis, suprā, aperturā oblongā, labro subincrassato; carneo-albicante, coccineo-rufo vividè latifasciatā, fasciis hic illic interruptis, ætate gradatim evanidis, areis inter fasciis lineis brevibus guttisque fuscis irregulariter notatis, columellā aurantiā, basi et parte superiori in adultā intensè castaneo-nigrā, aperturæ faucē aurantiā tinclā.*

THE HANDSOME VOLUTE. Shell ovately fusiform, rather thin, increasing thicker with age, spire exserted,

pyramidal, rudely globosely papillary at the apex, whorls smooth, striated at the base, angled round the upper part, longitudinally ribbed, ribs rather swollen, equidistant, obsolete next the sutures, compressly tubercled on the angle, columella rudely three-plaited near the base, of which the middle plait is the largest, with numerous fine thread-like plaits above, which are partially obsolete, aperture oblong, lip rather thickened; flesh-white, broadly banded with bright scarlet-red, bands here and there interrupted, gradually vanishing with age, areas between the bands irregularly marked with short brown lines and blotches, columella orange, base and upper part stained in the adult with deep chestnut-black, interior of the aperture tinged with orange.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 404. *Hab.* Africa (East Coast?)

This beautiful species has only been known hitherto by a worn imperfect specimen in the Museum of the Jardin des Plantes, Paris. Lamarck, noting its specific peculiarities, undertook to describe it, about the year 1820, as new, observing that it "approaches *V. Magellanica*, but is very distinct and more ornamented." It will be seen from this observation, that Lamarck had little notion of the noble growth and bright scarlet colouring of the species, now exhibited in these magnificent specimens from the collections of the Rev. W. R. Crotch and Mr. Dennison; by which it is illustrated in its perfection and in different stages of growth. It will be observed totally to differ from *V. Magellanica*, and cannot be admitted into the same section of the genus. Its true place is with the *V. musica* and *Hebræa*. Mr. Dennison's richly painted specimen, of which the brightness of the colour is not in the least degree exaggerated in our figure, is of rather light structure, the spire forming an even pyramid of angular ribs. Before me is another specimen from the same collection more advanced in age, in which the colouring is of a paler scarlet hue, and commences to be broken up in large interrupted patches; and in the fine adult specimen from Mr. Crotch's collection, the scarlet painting is only partially distributed, the brown fragments of lines remaining here and there, whilst a rich dark chestnut-black layer of enamel is deposited at maturity about the base and upper extremity of the columella. The columellar plaits consist of three very prominent ones at the base, of

which the middle is the largest, and there are several fine thread-like plaits above, as in the *V. musica* and its congeners, which are more or less obsolete.

Concerning the locality of this species Mr. Dennison writes me:—"I met with these shells in Liverpool, and from inquiries made at the time, my impression is that they were from some part of the Eastern Coast of Africa." Mr. Crotch, in part confirming this opinion, writes:—"All that I can say of the locality of *Voluta festiva*, is, that it was brought to Liverpool by the captain of a ship from the coast of Africa, but whether east or west I know not."

M. D'Orbigny, confounding the *V. Magellanica* with this species, owing, probably, to Lamarck's erroneous comparison, says, "It is evident that the *Voluta festiva* was only known to Lamarck in a very young state, in which it is slightly ribbed and tubercled, but as the shell increases it loses the tubercles and becomes almost smooth. It inhabits the entire coast of Patagonia, from Bahia Blanca to the strait of Magalhaens. We have collected it to the south of the Rio Negro, and in all the tents of the Patagonians encamped on the Rio Santa Cruz we observed this shell in use as a drinking cup."

These interesting observations of M. D'Orbigny refer without doubt to the *Voluta Magellanica*. The *Voluta festiva* is a species from some part of Africa, of which only a few specimens have yet been seen, and in which the tubercles are more prominently developed as the shell advances in growth.

Species 29. (Mus. Cuming.)

VOLUTA PRÆTEXTA. *Vol. testā subelongato-ovalā, basi truncatā, spirā breviusculā, apice papillari, subacuminatā, anfractibus supernè declivibus, deinde plano-convexis, columellā triplicatā, aperturā subeffusā, labro vix incrassato; albidā, fulvescente-fusco undique nitidè subtiliter reticulatā, anfractuum margine saturali intensè castaneo maculatā, maculis flexuosis linearibus distantibus bifasciatā, aperturæ fauce castaneo tinctā.*

THE LACE VOLUTE. Shell somewhat elongately ovate, truncated at the base, spire rather short, papillary and slightly acuminate at the apex, whorls slanting round the upper part, then flatly convex, columella three-plaited, aperture slightly effused, lip scarcely thickened; whitish, neatly finely reticulated throughout, sutural edge of the whorls spotted with very dark chestnut, and encircled with two bands of distant flexuous linear spots, interior of the aperture tinged with chestnut.

Hab. North Coast of Australia; Jukes.

This little species belongs to that section of the genus comprising *V. volva*, *Turneri*, and *reticulata*, from which I have no hesitation in pronouncing it to be distinct. The net-work is not the net-work of *reticulata*, it is from a different loom, and the bands, composed of a few very characteristic flexuous streaks, have no affinity of design with those of the congeneric species, all of which are eminently distinct from each other though modelled on the same specific type.





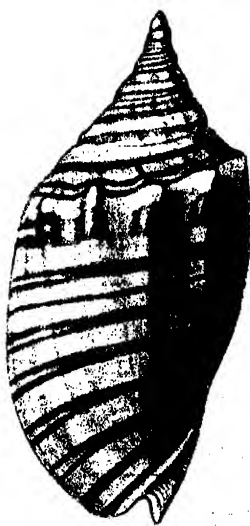
30.



31 a



31. b.



32.

VOLUTA.

PLATE XIII.

Species 30. (Mus. Cuming.)

VOLUTA MACULATA. *Vol. testâ subpyriformi-oblongâ, crassiusculâ, spirâ brevi, apice papillari et obtusâ, anfractibus lævibus, politis, supernè declivibus, deinde tumidis, columellâ quadriplicatâ, aperturâ elongatâ, labro vix incrassato; vividè aurantio-luteâ, lineis irregularibus castaneis, cæruleo nebulatis, fasciatâ.*

THE SPOTTED VOLUTE. Shell somewhat pyriformly oblong, rather thick, spire short, obtuse and papillary at the apex, whorls smooth, polished, slanting round the upper part, then swollen, columella four-plaited, aperture elongated, lip scarcely thickened; bright orange-yellow, banded with irregular blue-clouded chestnut lines.

SWAINSON, *Exotic Conchology*, p. 23. pl. 38.

Hab. Australia.

A delicate bright orange-yellow shell, of rather solid growth, banded with chestnut lines, clouded behind with blue, the lines not being parallel to each other, but straggling and at irregular intervals. Another specimen in the British Museum is of rather larger size, but less distinctly marked, than that here represented from Mr. Cuming's collection.

Species 31. (Mus. White.)

VOLUTA MARMORATA. *Vol. testâ oblongâ, tenuiculâ, ventricosâ, basin versus gradatim attenuatâ, spirâ brevi, acuminatâ, apice subpapillari, anfractibus lævibus, supernè concavo-angulatis, ad angulum subtiliter acutè tuberculatis, deinde inflatis, columellâ fortiter quadriplicatis, aperturâ elongatâ, labro subincrassato, effuso; fulvescente-aurantiâ, lineis subtilibus castaneis, latè undulatis, hic illuc e suturis descendentibus, in fasciis duabus concinnè cæruleo-nebulatis, columellâ et aperture fauce aurantio-carneolis.*

THE MARBLED VOLUTE. Shell oblong, rather thin, ventricose, gradually attenuated towards the base, spire short, somewhat papillary at the apex, whorls smooth, concave angled round the upper part, finely sharply tubercled at the angle, then inflated, columella strongly four-plaited, aperture elongate, lip slightly thickened, effused; fulvous orange, with fine broadly waved chestnut lines descending here and there from

the sutures, and prettily blue-clouded in two bands, columella and interior of the aperture orange-carneolion.

SWAINSON, *Exotic Conchology*, Pl. 1.

Hab. Australia.

It was with this delicate and prettily marked species, that Swainson, a great admirer of the Volutes, commenced his 'Exotic Conchology.' Though differing materially from the preceding species in form, by its light inflated structure, it partakes somewhat of the colour and design of painting, the ground tint being of a fulvous orange hue, while the bands are formed by a similar blue-clouded shading of the markings. The specimen here figured from the collection of Henry Hopley White, Esq., is about the ordinary size of the species, which varies considerably in this respect, as may be seen by one in the British Museum of nearly twice the dimensions.

Species 32. (Mus. Cuming.)

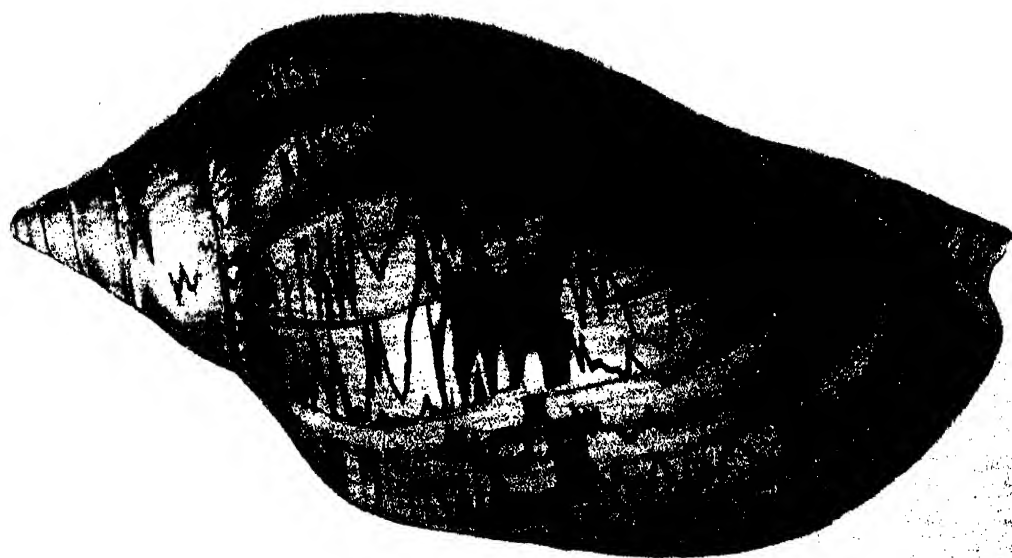
VOLUTA VEXILLUM. *Vol. testâ oblongo-ovalâ, crassâ, spirâ breviusculâ, acuminatâ, apice erectâ, papillari, anfractibus lævibus, supernè angulatis, ad angulum acutè compressè tuberculatis, columellâ fortiter quadriplicatâ, plicis perpaucis parvis irregularibus suprâ, aperturâ semiovali, labro acuto, effuso; rosaceo-albâ, tenuis angulatis, vividè aurantiis, prope labrum divisis, undique cingulatâ.*

THE FLAG VOLUTE. Shell oblong-ovate, thick, spire rather short, acuminated, erect and papillary at the apex, whorls smooth, angled round the upper part, sharply compressly tubercled at the angle, columella strongly four-plaited, with a very few small irregular plaits above, aperture semioval, lip sharp, effused; pinkish-white, encircled throughout with narrow ribands of bright orange which become divided near the lip.

CHEMNITZ, *Conch. Cab.* vol. x. p. 152.

Hab. Ceylon.

This eminent shell, the 'Pavillon d'Orange' and 'Orange Flag' of early writers, is still of rare occurrence, and unapproached by any other species of the genus. It is worthy of observation that the bright orange ribands of painting which characterize it, mostly become divided, on reaching maturity, into two shreds.



VOLUTA.

PLATE XIV.

Species 33. (Fig. *a* and *b*, Mus. Cuming.)

VOLUTA MAGELLANICA. *Vol. testā ovato-oblongā, ventricosā, nunc tenuiculā, lævigatā, nunc crassiusculā, obscure nodoso-tuberculatā, spirā brevi, acuminatā, apice papillari, anfractibus superne obtusè angulatis, deinde subinflatis, columellā quadriplicatā, subcallosā, aperturā patulā, labro viz incrassato; fuscescente-albā, lineis castaneis undatis, e suturis promiscuè descendentibus, interdum fasciatim nebulatis, profusè pictā, columellā labroque subaurantiis.*

THE MAGELLANIC VOLUTE. Shell ovately oblong, ventricose, sometimes rather thin, sometimes obscurely nodosely tubercled, spire short, acuminated, papillary at the apex, whorls obtusely angled round the upper part, then rather inflated, columella four-plaited, rather callous, aperture wide open, lip but slightly thickened; brownish white, profusely painted with waved chestnut lines, descending promiscuously from the sutures, sometimes clouded into bands, lip and columella tinged with orange.

CHEMNITZ, Conch. Cab. vol. x. p. 139. pl. 148. f. 1313-4.

Varieties.

Voluta subnodosa, Leach.

Voluta tuberculata, Swainson.

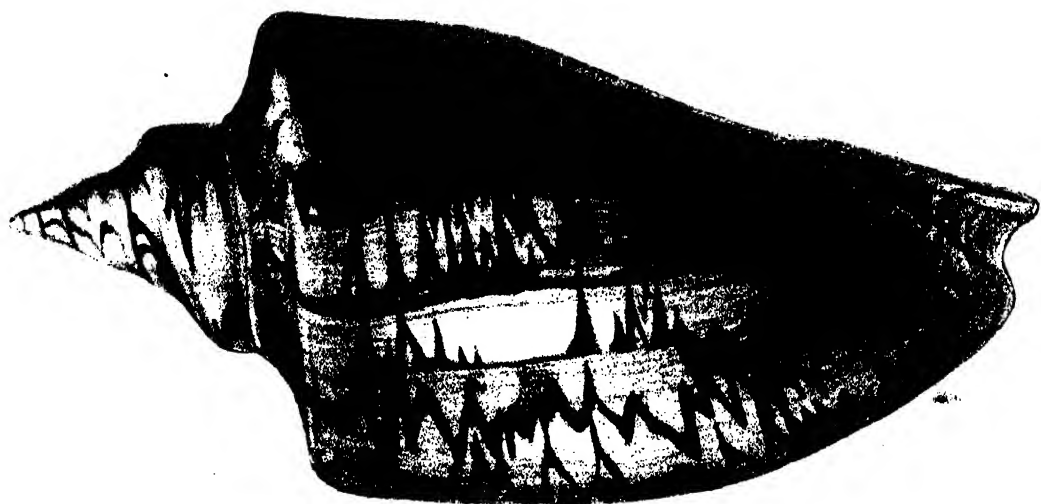
Voluta festiva, D'Orbigny (not of Lamarck).

Hab. Coast of Patagonia; D'Orbigny. Tierra del Fuego; Cuming.

In speaking of this species, it will be well to notice in the first instance that I follow Lamarck, D'Orbigny, and Deshayes in ascribing the broad shell under consideration, distinguished by its four- or five-plaited columella, ventricose growth, and short acuminated spire, to the *Voluta Magellanica* of Chemnitz; while the elongated shell with a sharp exerted spire and only two to three columellar plaits, referred to it by Kiener and Sowerby, is regarded by me, after the same authorities, as the *Voluta ancilla* of Solander in the Portland Catalogue.

The *Voluta Magellanica* is found abundantly on the coast of Patagonia from the Bay of San Antonio to the Straits of Magalhaens and Tierra del Fuego, and was observed by M. D'Orbigny to be in use among the natives as a drinking cup. As in most Volutes, the shell is not unfrequently tubercled, sometimes the first few whorls only are noduled, sometimes the nodular tubercle-like growth extends to the last whorl, in which state it is the *V. subnodosa* of Leach, then *tuberculata* of Swainson. In all conditions the painting consists of a promiscuous assemblage of undulated chestnut lines, waved with little regard to pattern or regularity, and occasionally clouded to about the middle, indicating a band. The shell taken by M. D'Orbigny for Lamarck's *Voluta festiva* is evidently a variety of this; the author of the 'Voyage dans l'Amérique Méridionale' having attached an importance to Lamarck's observations on that species, which does not belong to them.





VOLUTA.

PLATE XV.

Species 34. (Mus. Cuming.)

VOLUTA BRASILIANA. *Vol. testâ subgloboso-ovata, ventricosa, spirâ brevissimâ, apice vix papillari, anfractibus lineis incrementi rudè notatis, supernè gibboso-angulatis, ad angulum nodoso-tuberculatis, columellâ biplicatâ, aperturâ patulâ; intus extusque fulvescente, immaculatâ.*

THE BRAZILIAN VOLUTE. Shell somewhat globosely ovate, ventricose, spire very short, apex scarcely papillary, whorls rudely marked with the lines of growth, gibbously angled round the upper part, nodosely tubercled at the angle, columella two-plaited, aperture wide open; light fulvous within and without.

SOLANDER, Catalogue of the Portland Museum, p. 186. no. 3958.

Voluta colocynthis, Chemnitz.

Hab. Coast of Buenos Ayres; D'Orbigny.

This species was first made known by Favanne under the title of 'Le Coloquinte,' or 'Wild Gourd;' but before a Latin significance was given to this by Chemnitz, in the name *Voluta colocynthis*, it was published by Dr. Solander in the Catalogue of the Portland Museum with the name *Voluta Brasiliana*, descriptive of its locality.

It is somewhat doubtful whether the species exists of so large a size in the present day as here represented. The specimen figured was found by Mr. Cuming at Buenos Ayres, buried with others in a bank composed of loose earth and worn shells, at a distance of about fifty miles from the sea. M. D'Orbigny relates having seen it in abundance, dead, upon the sandy points of the coast, from the mouth of the Rio de la Plata to Patagonia, where it is particularly common about the mouth of the Rio Negro, but much smaller; one he collected alive, and has figured, with the animal, in his magnificent work 'Voyage dans l'Amérique Méridionale,' Moll, Pl. 60. f. 4-6.

Species 35. (Mus. Rucker.)

VOLUTA ANGULATA. *Vol. testâ plano-fusiformi, subtrigona, spirâ brevi, acuminatâ, apice acutiusculâ, anfractibus lævibus, supernè depresso-angulatis, columellâ ampliter triplicatâ, aperturâ patulâ, labro simplici; fulvescente-spadiceâ, lineis castaneis saepe raris, distantibus, e suturis promiscuè descendantibus.*

THE ANGLED VOLUTE. Shell flatly fusiform, somewhat triangular, spire short, acuminate, rather sharp at the apex, whorls smooth, depressly angled round the upper part, columella largely three-plaited, aperture wide open, lip simple; light fulvous bay, with waved chestnut lines, often few and distant, descending promiscuously from the sutures.

SWAINSON, Exotic Conchology, Pl. 3 and 4.

Voluta Dufrenoyi, Donovan.

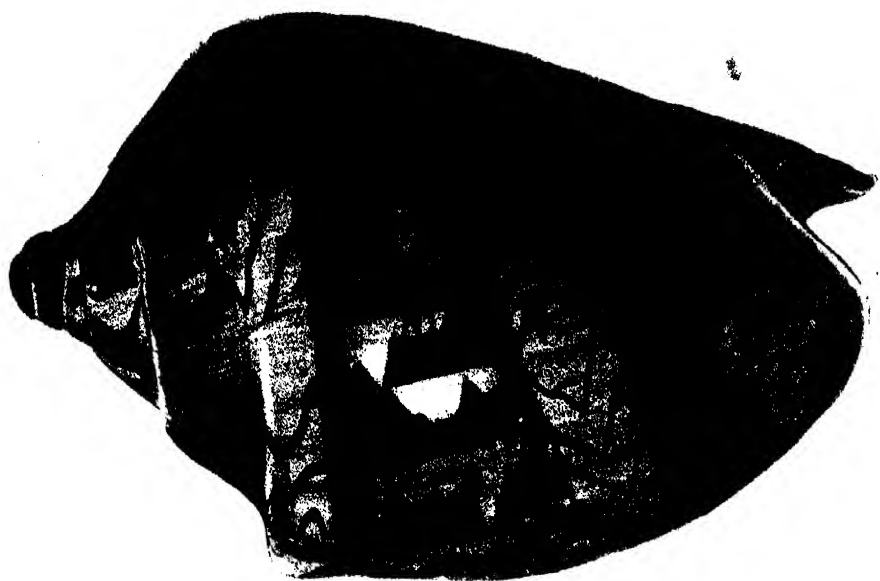
Voluta nasica, Shubert and Wagner.

Volutella angulata, D'Orbigny.

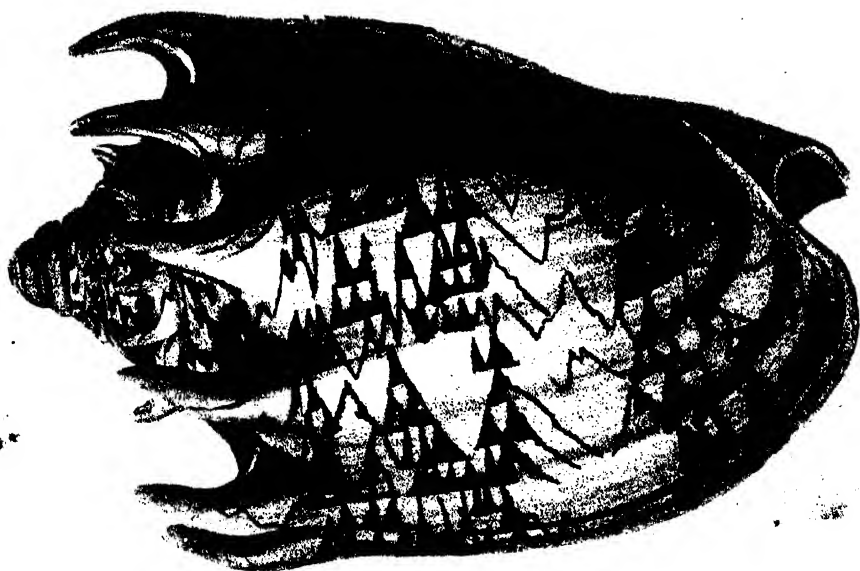
Hab. Buenos Ayres and Patagonia; D'Orbigny.

This species is chiefly remarkable from the circumstance, that the animal, which is beautifully spotted all over like a leopard, has a lobe extending from the mantle on the left side over the shell, after the manner of a Cowry. It does not, however, secrete a vitrified enamel, but a milky glazed coating, like *Cymbium*, through which the zigzag marking is mostly visible. In a specimen before me from Mr. Dennison's collection, the shell is entirely covered with this glazed coating, flowing beyond the apex even, and the marking is obliterated, whilst the columella and interior of the aperture is of a rich carnelian colour.

M. D'Orbigny observed this species to inhabit the coast of South America from the mouth of the Rio de la Plata, north of Buenos Ayres, to the Bay of San Blas in Patagonia, where it lives buried in the sand. Having captured a specimen that was advancing from its hiding-place into the water, he kept it alive for several days in a glass vessel, during which time it walked about enveloped by the lobe of its mantle.



37.



36.

VOLUTA.

PLATE XVI.

Species 36. (Mus. Rucker.)

VOLUTA IMPERIALIS *Vol. testâ oblongo-turbinatâ, crassissimâ, ponderosâ, spirâ brevi, apice obtusè papillari, anfractibus supernè concavo-angulatis, spinis grandibus erectis squamatis ad ungulum coronatis, columellâ quadruplicatâ, aperturâ subamplâ, labro viz incrassato; fulvescente-spadiceâ, maculis lineisque castaneis undatis et angulatis, hic illic fasciatim dispositis, ornatâ, columellâ et aperturæ fauce aurantio-carneolis.*

THE IMPERIAL VOLUTE. Shell oblong-turbinated, very thick, ponderous, spire short, obtusely papillary at the apex, whorls concavely angled round the upper part, crowned with large erect squamate spines at the angle, columella four-plaited, aperture rather large, lip scarcely thickened; pale fulvous bay, ornamented with waved and zigzag chestnut spots and lines, disposed here and there in bands, columella and interior of the aperture orange-carnelian.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 385. *Hab.* Philippine Islands; Cuming.

This noble species was originally named *Murex Spenglerianus* by Martini, in honour of an eminent amateur of the last century, and it would have been well, notwithstanding the irregular nomenclature of the 'Conchylien Cabinet,' had Lamarck adopted that name. It was called the 'Grand Foudre Chinois de M. Spengler,' also the 'Chinese Emperor's Crown,' *Corona Imperatoris Chinensium*, and 'Die Mogolskrone,' 'The great Mogul's Crown.' It presents little variation of growth and is always more or less prominently coronated.

Species 37. (Mus. Cuming.)

VOLUTA SCAPHA. *Vol. subquadrato-turbinatâ, crassissimâ, ponderosâ, spirâ brevissimâ, apice obtusè papillari, anfractibus levibus, supernè declivibus, deinde gibboso-angulatis, ad angulum interdum autem rarissimè tuberculatis, columellâ fortiter quadruplicatâ, callosâ, præcipuè ad partem superiorem, aperturâ subamplâ, labro simplici, suprâ subalato; fulvescente-spadiceâ, maculis nebulatis lineisque angulato-flexuosis castaneis variè pictâ, columellâ carulescente-albâ, apertura fauce cinereo-fuscescente lineata.*

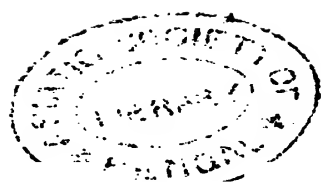
THE SKIFF VOLUTE. Shell somewhat squarely ovate, very thick, ponderous, spire very short, obtusely papillary at the apex, whorls smooth, slanting round the upper part, then gibbously angled, sometimes, but very rarely, tubercled at the angle, columella strongly four-plaited, callous, especially at the upper part, aperture rather large, lip simple, slightly winged above; light fulvous bay, variously painted with angularly flexuous lines and clouded blotches, columella bluish white, interior of the aperture tinged with ash-brown.

GMELIN, Syst. Nat. p. 3468.

Variety. *Voluta fasciata*, Schubert and Wagner.

Hab. Singapore (on the reefs); Cuming.

There is little variation of growth in this well-known species, and the painting, though more or less disposed in lines or blotches, is much of the same character. It has been long known as the 'Skiff' or 'Boat Volute'; *Cymbium Capitis Bonæ Spei* of Martini, and *Gondole mammillaire* of Davila.





38 a



38 b



39



40 a



VOLUTA.

PLATE XVII.

Species 38. (Fig. 38 a, Mus. Saul. Fig. 38 b, Mus. Cuming.)

VOLUTA PACIFICA. *Vol. testâ oblongo-fusiformi, subventricosâ, spirâ plus minusve exsertâ, apice vix papillari, anfractibus lævibus, supernè tuberculatis, tuberculis nunc prominentibus, nunc ferè obsoletis, columellâ quatuor- ad quinquuplicatâ, lammam expansam sæpe efformante, aperturâ oblongâ, labro subreflexo; carneo-fuscescente, maculis castaneis hieroglyphicis trifasciatâ, interstitiis strigis undatis pallidioribus promiscuè pictis, aperturæ fauce aurantio-carneolatâ.*

THE PACIFIC VOLUTE. Shell oblong-fusiform, rather ventricose, spire more or less exserted, scarcely papillary at the apex, whorls smooth, tubercled round the upper part, tubercles sometimes rather prominent, sometimes almost obsolete, columella four- to five-plaited, often forming an expanded lamina, aperture oblong, lip slightly reflected; light flesh-brown, encircled with three bands of chestnut hieroglyphic spots, the interstices being promiscuously painted with waved streaks of lighter brown, interior bright flesh-orange.

SOLANDER, Cat. Portland Muscum, p. 190. no. 4039.

Buccinum Arabicum, Martyn.

Voluta Arabica, Gmelin.

Variety. *Voluta elongata*, Swainson.

Hab. Van Diemen's Land. New Zealand.

The light ventricose variety of this species, constituting the *V. elongata* of Swainson, is of much more common occurrence than that which is strongly tubercled. The latter variety, always more richly marked, was distinguished by Favanne with the name of '*La robe Turque*.' Most specimens have a thin lamina expanded over the columella.

Species 39. (Mus. Cuming.)

VOLUTA ANCILLA. *Vol. testâ elongato-oblongâ, subfusiformi, tenuiculâ, spirâ exsertâ, apice peculiariter con tortâ, parum papillari, anfractibus convexis, lævisculis, columellâ bi- tri-plicatâ, aperturâ subangustâ, labro simplici; fulvescente, strigis fuscis, longitudinaliter undatis, hic illic pictâ.*

THE CAPTIVE VOLUTE. Shell elongately oblong, somewhat fusiform, rather thin, spire exserted, peculiarly twisted and but little papillary at the apex, whorls convex, rather smooth, columella two- three-plaited, aperture rather narrow, lip simple; pale fulvous, painted here and there with longitudinally waved brown streaks.

SOLANDER, Portland Catalogue, no. 1873; Lamarck, Anim. sans vert. (Deshayes' edit.) vol. x. p. 398.

Voluta spectabilis, Gmelin.

Voluta Magellanica, Sowerby (not of Chemnitz).

Hab. Bay of Good Success; Tierra del Fuego; Cuming. Coast of Patagonia; D'Orbigny.

This species inhabits the coasts of Patagonia and Fuegia with the *V. Magellanica*, from which it may be readily distinguished by its more sharply elongated growth and twisted apex.

Species 40. (Mus. Cuming.)

VOLUTA GRACILIS. *Vol. testâ oblongo-fusiformi, spirâ exsertâ, apice papillari, anfractibus lævibus, supernè declivibus, deinde tumido-costatis, costis gradatim ecanidis, columellâ quadriplicatâ, aperturâ oblongâ, labro subincrassato; fulvescente, lineis castaneis undatis longitudinaliter pictâ, lineis trifasciatim saturatioribus.*

THE SLENDER VOLUTE. Shell oblong-fusiform, spire exserted, papillary at the apex, whorls smooth, slanting round the upper part, then ribbed in a swollen manner, ribs gradually fading, columella four-plaited, aperture oblong, lip rather thickened; pale fulvous colour, painted longitudinally with waved chestnut lines.

SWAINSON, Journal of Science, vol. xvii. p. 32.

Hab. Australia.

By exhibiting this species and the *V. Pacifica* in juxtaposition, each of the natural size, their distinctive character may be readily understood. The *V. gracilis* is uniformly of much smaller size, the tubercles have the form of swollen ribs, and there is no expanded columellar lamina.



41 a.



41 b.



42



43 a.



VOLUTA

PLATE XVIII.

Species 41. (Mus. Cuming.)

VOLUTA NUCLEUS. *Vol. testâ ovatâ, spirâ brevi, apice acutâ, anfractibus longitudinaliter crebricostatis, costis parvis, gradatim irregularibus et æcanidis, anfractu ultimo sæpe hic illic varicoso, columellâ bicipitatâ, plicis perparvis minutis obsolete supra; carneo-fuscescente, fusco hic illic variegatâ et punctatâ, varicibus labroque nigripunctatis.*

THE KERNEL VOLUTE. Shell ovate, spire short, sharp at the apex, whorls longitudinally closely ribbed, ribs small, gradually irregular and fading away, last whorl often varicose here and there, columella two-plaited, with a few minute obsolete plaits above; flesh-brown, here and there variegated and dotted with brown, lip and varices black-dotted.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 405.

Voluta perdicina, Megerle.

Hab. North Australia; Jukes.

The irregular varicose growth of the last whorl appears to be characteristic of the species.

Species 42. (Mus. Brit.)

VOLUTA BECKII. *Vol. testâ fusiformi-oblongâ, spirâ subacuminatâ, apice papillari, anfractibus transversim striatis, supernè concavo-declivibus, deinde plicato-tuberculatis, columellâ arcuatâ, fortiter triplicatâ, aperturâ ovato-oblongâ, labro simplici; fulvescente, lineis castaneis undatis hic illic longitudinaliter pictâ.*

BECK'S VOLUTE. Shell fusiformly oblong, spire somewhat acuminate, papillary at the apex, whorls transversely striated, concavely slanting round the upper part, then plicately tubercled, columella arched, strongly three-plaited, aperture ovately oblong, lip simple; fulvous, painted longitudinally here and there with waved chestnut lines.

BRODERIP, Pro. Zool. Soc. 1847, p. 43.

Hab. — ?

This is the largest species of the genus known, the accompanying figure being reduced more than a third from the original specimen.

Species 43. (Mus. Cuming.)

VOLUTA ZEBRA. *Vol. testâ ovato-oblongâ, Marginella-formi, crassâ, spirâ brevi, apice subpapillari, anfractibus lævibus, supernè tumidiusculis, medianis obsolete plicato-nodulosis, columellâ fortiter quadriplicatâ, aperturâ subangustâ, labro incrassato, non reflexo; eburneâ, aut ferrugineo lineatâ, strigis numerosis castaneis subflexuosis undique lineatâ.*

THE ZEBRA VOLUTE. Shell ovate-oblong, Marginella-shaped, thick, spire short, apex rather papillary, whorls smooth, rather swollen round the upper part, middle whorls obsoletely plicately noded, aperture rather narrow, lip thickened, not reflected; ivory-white or rust-stained, lineated throughout with numerous slightly flexuous chestnut streaks.

LEACH, Zoological Miscellany, vol. i. pl. 12. f. 1.

Marginella radiata, Lamarck.

Voluta radiata, Kiener.

Voluta stragulata, Megerle.

Endem var., *Voluta lineata*, Leach.

Hab. Australia.

Two states of this species, differing immaterially from each other, were described some five and thirty years since by Dr. Leach, in his Zoological Miscellany under the names *V. zebra* and *lineata*. Eight years subsequent to this Lamarck describes it among the *Marginella* with the name *M. radiata*, from a specimen communicated to him by Mr. Alexander Macleay, Botanist and Secretary of the Linnæan Society, who afterwards settled in Australia. It was then described by Megerle under a fourth name *V. stragulata*, and published by Schubert and Wagner in their Supplement to the Conchylien Cabinet of Martini and Chemnitz.





VOLUTA.

PLATE XIX.

Species 44. (Mus. Brit.)

VOLUTA MAMILLA. *Vol. testā ovatā, tenui, ventricosā, spirā brevi, in mamillam amplam tumidam distortā, anfractibus lœvibus, columellā triplicatā, aperturā sub-amplā; fulvā, strigis undatis longitudinaliter reticulatā, fasciā immaculatā medio intermittente.*

THE NIPPLE VOLUTE. Shell ovate, thin, ventricose, spire short, distorted into a large swollen nipple, whorls smooth, columella three-plaited, aperture rather large; fulvous, reticulated longitudinally with waved streaks, leaving an unspotted band in the middle.

GRAY; Sowerby, *Thesaurus Conch.* p. 207. pl. 50. f. 57, 58.
Hab. Australia.

This shell is in a very immature state, and there can be little doubt of the swollen apex being a malformation. No importance can be attached to this, and I adopt the species only because the painting with its light central band does not agree with any other.

Species 45. (Mus. Cuming.)

VOLUTA FLAVICANS. *Vol. testā ovatā, vel oblongo-ovatā, basi productā, crassā, spirā breviusculā, apice obtusā, anfractibus lœvibus, aut longitudinaliter minutissimè striatis, supernè tumidiusculis, interdum squamato-tuberculatis, columellā fortissimè quadriplicatā, aperturā subangustā, labro supernè sinuato; flavicante, viridi-fusco infra suturas maculatā et undique nebulatā.*

THE YELLOWISH VOLUTE. Shell ovate or oblong-ovate, produced at the base, thick, spire rather short, obtuse at the apex, whorls smooth or longitudinally very minutely striated, rather swollen round the upper part, sometimes squamately tubercled, columella very strongly four-plaited, aperture rather narrow, lip sinuated round the upper part; yellowish, blotched beneath the sutures, and mottled throughout with greenish brown.

GMELIN, *Syst. Nat.* p. 3464.

Pyram. Moltkianum, Martini.

Voluta voluacea, parva, Lamarck.

Voluta punctata, Kiener (not of Swainson).

Var. *elongata*. *Voluta signifer*, Broderip.

Hab. Australia.

There is no species in which the columellar plaits are so strongly developed as in the *V. flavicans*. In some specimens they are raised nearly a quarter of an inch above the surface of the body-whorl, and are always more or less distinctly continued outwardly round the base. The shell is of very solid growth, coloured with an obscure mottled blue or greenish-red, and was known to the early Dutch conchologists by the name of the 'Bergamot Pear.'

The shell presented to Mr. Cuming by Dr. Dalen of Rotterdam, and described by Mr. Broderip as a new species (*Pro. Zool. Soc.* 1847, p. 232), under the name *V. signifer*, is an elongated form of *V. flavicans* in which the lip is not quite mature.

Species 46. (Mus. Dennison.)

VOLUTA CYMBIOLA. *Vol. testā oblongo-pyriformi, spirā brevi, apice obtusè papillari, suturis subrudibus, subtiliter spinoso-squamatis, anfractibus supernè concavo-declivibus, deinde peculiariter spinoso-squamatis, squamis brevibus, acutis, erectis, subdistantibus, columellā quadriplicatā, aperturā oblongā, labro viz incrassato; cinereo-virescente, punctis lineisque fuscis brevibus, fulvo-umbratis, aspersā, suturis nigro-fusco lineatis, aperturā fauce olivaceo-cinereā.*

THE LITTLE BOAT VOLUTE. Shell oblong-pear-shaped, spire short, obtusely papillary at the apex, obtusely somewhat rude, finely spinosely squamate, whorls concavely slanting round the upper part, then peculiarly spinosely squamate, the scales being short, sharp, erect, and rather distant, columella four-plaited, aperture oblong, lip scarcely thickened; ash-green, sprinkled with brown fulvous shaded dots and short lines, sutures lined with black-brown, interior of the aperture olive-ash.

CHEMNITZ, *Conch. Cab.* vol. x. p. 141. pl. 148. f. 1385, b.

Voluta coronata, Kiener.

Hab. Moluccas.

This species differs remarkably from any other; there is a great peculiarity in the style of painting, as well as in the short erect spine-scales with which it is coronated.



47.



48.



50.



49.

VOLUTA.

PLATE XX.

Species 47. (Mus. Brit.)

VOLUTA LUTEOSTOMA. *Vol. testâ subquadrato-ovatâ, crassâ, spirâ brevî, apice obtusâ, anfractibus longitudinaliter striatis, superne angulatis, ad angulum tuberculatis et acutè squamatis, columellâ fortissimè quadriplicatâ, aperturâ oblongâ, labro intus incrassato, subreflexo; luteâ, intense fusco trigono-reticulatâ, aperturæ fauce rivicè luteâ.*

THE YELLOW MOUTH VOLUTE. Shell somewhat squarely ovate, thick, spire short, obtuse at the apex, whorls longitudinally striated, angulated round the upper part, tubercled and sharply squamate at the angle, columella very strongly four-plaited, aperture oblong, lip thickened within, slightly reflected; cream-colour, triangularly reticulated with very deep brown, interior of the aperture bright yellow.

CHEMNITZ, *Conch. Cab.* vol. ii. pl. 177. f. 1707, 8.

Murex luteostoma, Meuschen.

Voluta respertilio, var., Martini.

Voluta imperialis, var., Dillwyn.

Voluta chrysostoma, Swainson.

Hab.

The *V. luteostoma* is very distinctly characterized by its square thickened growth, squamate tubercles, and pattern of colouring, consisting externally of a very dark brown transverse net-work, and internally of a bright saffron yellow. Martini's figure of the species, *Conch. Cab.* vol. iii. pl. 97. f. 936, appears to have escaped observation.

Species 48. (Mus. Brit.)

VOLUTA LYREFORMIS. *Vol. testâ fusiformi-turritâ, spirâ acuminatâ, valdè productâ, apice globoso-papillari, anfractibus convexis, undique longitudinaliter crebricostatis, costis interstitiisque longitudinaliter striatis, anfractu ultimo basi transversim sulcato-corrugato, columellâ multiplicatâ, plicis inferioribus majoribus, cæteris parvis, aperturâ parviusculâ, oblongâ, labro subincrassato, extus varicoso; pallidè carneâ, maculis lineisque cæruleis castaneis et rufescentibus fasciatim pictâ.*

THE LYRE-SHAPED VOLUTE. Shell fusiformly turreted, spire acuminate, very much produced, globosely papillary at the apex, whorls convex, longitudinally closely ribbed throughout, ribs and interstices longi-

tudinally striated, last whorl transversely grooved in a wrinkled manner at the base, columella many-plaited, lower plaits larger, the rest small, aperture rather small, oblong, pale flesh-colour, painted in a banded manner with blue, chestnut, and reddish spots and lines.

BRODERIP, *Zoological Journal*, vol. iii. p. 83. pl. 3. f. 3.

Mitra lyreformis, Swainson.

Hab. East Coast of Africa.

This beautiful shell in our national collection, the only one of the species at present known, is remarkable for its elongated growth, ribbed sculpture and richly variegated painting.

The shell figured by M. Kiener for *Voluta lyreformis* appears to be the *V. megaspira* which follows.

Species 49. (Mus. Cuming.)

VOLUTA MEGASPIRA. *Vol. testâ fusiformi, turritâ, tenuiculâ, spirâ elongatâ, exsertâ, apice globoso-papillari, anfractibus transversim, subtiliter striatis, longitudinaliter plicato-costatis, costis aperturam versus gradatim evanidis, columellâ quinqueplicatâ, plicis superioribus parvis, subobsoletis, aperturâ oblongâ, parviusculâ, labro vix incrassato; carneo-fuscescente, rufescente-castaneo irregulariter maculatâ et fulguratâ.*

THE LARGE SPIRE VOLUTE. Shell fusiform, turreted, rather thin, spire elongated, exserted, apex globosely papillary, whorls transversely finely striated, longitudinally plicately ribbed, ribs gradually fading towards the aperture, columella five-plaited, upper plaits small, somewhat obsolete, aperture oblong, rather small, lip scarcely thickened; light flesh-brown, irregularly blotched and waved with reddish chestnut.

SOWERBY, *Thesaurus Conch.*, p. 298. pl. 48. f. 31, 32.

Hab. Japan; Siebold.

This elegant fusiform species is of rather light growth, delicately plicately ribbed, the ribs being sharp and compressed, and nearly obliterated on the last whorl. The specimen here figured from Mr. Cuming's collection, was brought from Japan by Dr. Siebold. There is a specimen in the collection of M. Delessert in Paris, figured erroneously by Kiener for the *V. lyreformis*, and another in the Museum at Leyden.

Species 50. (Mus. Brit.)

VOLUTA JUNONIA. *Vol. testā fusiformi-ovatā, spirā brevi, apice obtusā, anfractibus levibus, vel minutè decussatim striatis, supernè tumidiusculis, columellā fortiter quadriplicatā, aperturā longiusculā, labro simplici; lacteā, maculis intensè rufts seriatim regulariter pictā.*

THE PEACOCK-TAIL VOLUTE. Shell fusiformly ovate, spire short, obtuse at the apex, whorls smooth or minutely decussately striated, rather swollen round the upper part, columella strongly four-plaited, aper-

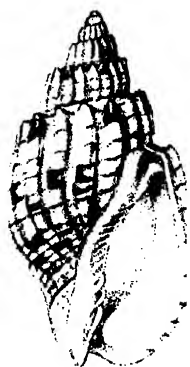
ture rather long, lip simple; cream-colour, regularly painted with rows of deep-red spots.

CHEMNITZ, Conch. Cab. vol. xi. pl. 177. f. 1703, 4.

Hab. Gulf of Mexico.

The spots in the shell here figured from the British Museum are arranged in double transverse rows, but it is not a character of the species.

The habitat of this very rare Volute is supposed to be on the northern shores of the Gulf of Mexico, near the mouth of the Appalachicola River.



52. a



52. b



55.



54. a



54. b

VOLUTA.

PLATE XXI.

Species 51. (Mus. Brit.)

VOLUTA COSTATA. *Vol. testâ oblongo-ovalâ, spirâ breviusculâ, turrilâ, apice subacutâ, anfractibus laevibus, vel minutissimè decussatim striatis, basi corrugato-sulcatis, ad suturas depresso-planis, deinde longitudinaliter costatis, costis regularibus, rotundatis, superne mucronatis, columellâ multiplicatâ, plicis tribus inferioribus distinctis, cæteris parvis, ferè obsoletis; albâ, croceorufescente promiscuè sparsim maculatâ et lineatâ.*

THE RIBBED VOLUTE. Shell oblong-ovate, spire rather short, turreted, rather sharp at the apex, whorls smooth, or very minutely decussately striated, corrugately grooved at the base, depressly flattened at the sutures, then longitudinally ribbed, ribs regular, rounded, pointed at the upper extremity, columella many-plaited, the three lower plaits distinct, the rest small, almost obsolete; white, promiscuously sparingly spotted and lineated with light saffron red.

SWAINSON, Journal of Science, vol. 17, p. 33.

Voluta anna, Lesson.

Harpula harpa, Swainson (in Exotic Conch.)

Voluta harpa, Deshayes (not of Barnes).

Voluta lyrata, Sowerby.

Hab. Moluccas.

The depressly flattened structure of the upper part of the whorls forms a characteristic angular shelf next the sutures, upon the edge of which the ribs terminate each in a point.

• Species 52. (Mus. Brit.) •

VOLUTA PUNCTATA. *Vol. testâ ovalâ, crassiusculâ, spirâ brevi, apice obtusâ, anfractibus superne concavo-declivibus, deinde subobacurè tuberculatis, columellâ fortiter quadripliatâ, et promiscuè punctatâ.*

THE DOTTED VOLUTE. Shell ovate, rather thick, spire short, obtuse at the apex, whorls concavely slanting round the upper part, then somewhat obscurely tubercled, columella strongly four-plaited; light fulvous rose, marked with square spots and promiscuously dotted of a darker colour.

SWAINSON, Zoological Illustrations, 1st Series, pl. 161.

Hab. — ?

This shell is not in very good condition, but has sufficient character to distinguish it from any other species.

There is nothing remarkable in the form; the pattern and colouring are peculiar, and not so much faded as to prevent an easy recognition of the species should a second specimen be found.

Species 53. (Mus. Brit.)

VOLUTA CONCINNA. *Vol. testâ fusiformi, subgracili, spirâ exsertâ, apice papillari, anfractibus transversim subtilissimè elevato-striatis, superne angulatis, et tuberculato-plicatis, columellâ quadripliatâ, aperturâ subangustâ; fulvâ, lineis castaneis undulatis, creberrimè longitudinaliter pictâ.*

THE NEAT VOLUTE. Shell fusiform, rather slender, spire exserted, papillary at the apex, whorls transversely very finely elevately striated, angulated round the upper part, and tubercularly plicated, columella four-plaited, aperture rather narrow; fulvous, very closely longitudinally painted with wavy chestnut lines.

BRODERIP, Proc. Zool. Soc. 1836, p. 43.

Hab. — ?

An elegantly formed species, of which this is the only specimen that has been seen. It is of a light fulvous colour, densely longitudinally striped throughout with slightly waved chestnut lines.

Species 54. (Mus. Brit.)

VOLUTA PULCHRA. *Vol. testâ ovato-oblongâ, spirâ subexsertâ, apice obtusâ et minutè nodulosâ, anfractibus laevibus, superne concavo-declivibus, angulatis, ad angulum tuberculatis, tuberculis prominentibus, subcompressis, erectis, mucronatis, columellâ quadripliatâ, saturatè trifasciatâ, maculis trigonis numerosis albis intermittente, fasciis punctis grandibus linearibus intense fuscis peculiariter aspersis, columellâ labroque vividè aurantio-carneolis.*

THE BEAUTIFUL VOLUTE. Shell ovately oblong, spire somewhat exserted, obtuse and minutely noduled at the apex, whorls smooth, concavely declining round the upper part, angled, tubercled at the angle, tubercles prominent, somewhat compressed, erect, pointed, columella four-plaited, aperture oblong, lip scarcely thickened; fulvous bay, darker in three bands, leaving numerous white triangular spots, bands peculiarly

sprinkled with very deep brown large linear dots, lip and columella bright orange carnelion.

SOWERBY, Tankerville Cat. App. p, 28, pl. 4, f. 2.

Hab. Australia; Macgillivray.

When Mr. Sowerby named this shell 'The Beautiful,' he little anticipated so complete a verification of the term as we find in the specimen before us. The species has only been known, hitherto, in a worn, discoloured state; in the shell here figured, collected in Australia by Mr. Macgillivray, and presented to the British Museum by the Earl of Derby, the painting is in its perfection, and a more beautiful object it is not easy to conceive.

The *Voluta pulchra* is nearest allied to *V. vespertilio*, but may be readily distinguished by its different style of net-work colouring and the sprinkling of dark oblong blotches, over the tubercles, around the middle, and at the base.

Species 55. (Mus. Brit.)

VOLUTA BULLATA. *Vol. testâ oblongo-cylindraceâ, tenuiculâ, spirâ brevi, obtusâ, apice papillari, anfractibus levibus, tumidiusculis, supernè contractis, columellâ buplicatâ, plicis basalibus, aperturâ angustâ, prope ad spiram ascendente, labro vix incrassato; fulvâ, lineis undulatis confusis maculisque castaneis promiscuè pictâ.*

THE BUBBLE-LIKE VOLUTE. Shell oblong-cylindrical, rather thin, spire short, papillary at the apex, whorls smooth, rather swollen, contracted at the upper part, columella two-plaited, plaits basal, aperture narrow, ascending nearly to the spire, lip scarcely thickened; fulvous, promiscuously painted with confused waved lines and chestnut blotches.

SWAINSON, Zoological Illustrations, Second Series.

Hab. Algoa Bay, South Africa.

A very remarkable species, the most abnormal form of the genus, of which there are two specimens in the British Museum.



57. a.



56.



57. b.



58 a.



59.



58 b.



60 a.



61.



60 b.

VOLUTA.

PLATE XXII.

Species 56. (Mus. Cuming.)

VOLUTA GUTTATA. *Vol. testā pyriformi-oblongā, crassā, basi subrecurvā, spirā acuminatā, apice subacutā, anfractibus plicato-costatis, costis gradatim evanidis, columellā multiplicatā, plicis duabus tribusve inferioribus distinctis, cæteris minutis, aperturā parviusculā, labro incrassato, varicoso, intus obsolete denticulato; rosaceo-albā, guttis rufo-fuscis hic illic irregulariter pictā.*

THE SPOTTED VOLUTE. Shell pyramiddally oblong, thick, a little recurved at the base, spire acumined, rather sharp at the apex, whorls plicately ribbed, ribs gradually fading away, columella many-plaited, two or three lower plaits distinct, the rest minute, aperture rather small, lip thickened, varicose, obsolete denticulated within; pinkish-white, painted irregularly with blotches of red-brown.

Hab. Honduras; Dyson.

An interesting new species of which two examples were collected, belonging to the same type as the little *V. Guildingii*.

Species 57. (Mus. Metcalfe.)

VOLUTA CYLLENIFORMIS. *Vol. testā ovatā, crassissimā, basi recurvā, spirā conicā, apice acutā, anfractibus supernè depresso-sulcatis, longitudinaliter acutè plicato-costatis, liris subtilibus plus minus obsolete decussatis, columellā anticè rugulosā, triplicatā, plicis parvis, acutis, aperturā parvā, labro incrassato, varicoso; albā, guttis aurantio-fuscescentibus hic illic promiscuè pictā.*

THE CYLLENE-SHAPED VOLUTE. Shell ovate, rather thick, recurved at the base, spire conical, sharp at the apex, whorls depressly grooved round the upper part, longitudinally sharply plicately ribbed, more or less obsolete decussated with fine ridges, columella rugulose in front, three-plaited, plaits small, sharp, aperture small, lip thickened, varicose; white, promiscuously painted here and there with light orange-brown spots.

SOWERBY, Thesaurus Conch. p. 214. pl. 55. f. 112, 113.

Hab. — ?

This interesting little species, so nearly resembling a *Cyllene* in general aspect, is at present unique in the collection of William Metcalfe, Esq.

Species 58. (Mus. Taylor.)

VOLUTA ABYSSICOLA. *Vol. testā pyriformi, tenui, spirā brevi, subturritā, apice acutā, anfractibus supernè depresso-canaliculatis, liris numerosis acutis longitudinalibus et transversis undique creberrimè subprofundè cancellatis, liris supernè mucronatis, columellā quadripliatā, aperturā subangustā, labro tenui; fulvescente-cinereā, fasciis rufo-fuscis angustis tribus vel quatuor cingulatā.*

THE DEEP-INHABITING VOLUTE. Shell pear-shaped, thin, spire short, somewhat turreted, sharp at the apex, whorls depressly channelled round the upper part, rather deeply very closely cancellated throughout with numerous sharp ridges, which are pointed at the upper part, columella four-plaited, aperture rather narrow, lip thin; fulvous-ash colour, encircled with three or four narrow red-brown bands.

ADAMS and REEVE, Moll. Voy. Samarang, pl. 7. fig. 6.

Hab. Cape of Good Hope (dredged from a bank of dead shells and rounded iron-stones, at the depth of 132 fathoms); Belcher.

This elaborately carved species is one of considerable interest, from the circumstance of its being the first living representative of a group of highly-sculptured fossil species, abounding in the Eocene portion of our Tertiary beds. The principal of these *V. lima*, *elevata*, *crenulatā*, and *digitalina*, are well known to geologists and were distinguished as a subgenus by Mr. Swainson, under the name *Volutilithes*.

The *Voluta abyssicola*, under consideration, is not identical with any of the fossil species, the surface being characterized by a closer and more sharply defined pattern of lattice-work, comprising as many as thirty transverse and forty longitudinal ridges in a whorl. The upper edge of the whorls is depressly flattened at the sutures, forming a narrow ascending channel. The ridges are slightly nodulous at the point of crossing, and round the upper extremity impart a coronated aspect to the shell. The columellar plaits, four in number, are sharp and delicate. The outer lip is thin and does not appear to be mature.

Species 59. (Mus. Delessert.)

VOLUTA DUBIA. *Vol. testā ovato-fusiformi, spirā apicem*

versus papillari, anfractibus transversim tenuissimè striatis, longitudinaliter subplicatis, columellâ vic plicatâ; flavicante, maculis quadratis fulvo-rufis seriatim tessellatâ.

THE DOUBTFUL VOLUTE. Shell ovately fusiform, spire papillary towards the apex, whorls transversely very finely striated, longitudinally slightly plicated, columella scarcely plaited; yellowish, tessellated with rows of square fulvous-red spots.

BRODERIP, Zool. Soc. vol. iii. p. 81. pl. 3. f. 1.

Fusus tessellatus, Schubert and Wagner.

Hab. — ?

The columellar plaits of this species, which is unknown to me, are so faintly developed, that some doubt has been entertained of its genus. Shortly after the publication of it as a *Volute* in the Zoological Journal, from a specimen brought to this country by M. Roussel which Mr. Sowerby mentions having had in his possession, a second specimen was figured by Schubert and Wagner in their Supplement to the 'Conchylien Cabinet' as a *Fusus*. M. Kiener published a third specimen in his monograph of the same genus, in which the columellar plaits are not indicated at all. In my monograph of *Fusus* I introduced a copy of this (Conch. Icon. *Fusus*. Pl. XIV. Fig. 53). Mr. Sowerby has, however, kindly drawn my attention to its identity with the figure of *Volute dubia* of the Zoological Journal, and from the papillary structure of the apex there can be little doubt that the true position of this very rare and interesting species is in the genus to which Mr. Broderip first assigned it.

Species 60. (Mus. Sheepmaker.)

VOLUTA CASSIDULA. *Vol. testâ ovalâ, subinflatâ, spirâ brevi, apice acutâ, anfractibus convexis, tumidiusculis, undique concentricè creberrimè striatis, columellâ multiplicatâ, plicis tribus inferioribus distinctis, acutis, cæteris minutis, numerosis, irregularibus, aperturâ oblongâ,*

labro peculiariter effuso; carneo-lactèâ, lineis purpureo-fuscis subtilibus transversis guttisque promiscuè pictâ, columellâ labroque pallidè croceis.

THE LITTLE HELMET VOLUTE. Shell ovate, somewhat inflated, spire short, sharp at the apex, whorls convex, rather swollen, concentrically closely ridged throughout, columella many-plaited, the three lowest plaits sharp and distinct, the rest minute, numerous, irregular, aperture oblong, lip peculiarly effused; flesh-tinted cream-colour, promiscuously painted with purple-brown spots and fine transverse lines, lip and columella light saffron yellow.

Hab. Japan.

An interesting new species from the collection of Mr. Sheepmaker of Amsterdam, of which two or three specimens of similar character are known.

Species 61. (Mus. Cuming.)

VOLUTA GUILDINGII. *Vol. testâ pyramidalis-oblongâ, basi recurvâ, spirâ acuminatâ, anfractibus concentricè obtusè costatis, interstitiis liris subtilibus clathratis, columellâ multiplicatâ, plicis duabus tribusve inferioribus distinctis, cæteris minutis, aperturâ parviusculâ, labro incrassato, varicoso, intus obsolete denticulato; rosaceo-albâ, guttis rufo-fuscis hic illic irregulariter pictâ.*

GUILDING'S VOLUTE. Shell pyramidally oblong, recurved at the base, spire acuminate, whorls concentrically obtusely ribbed, interstices latticed with fine ridges, columella six-plaited, the three lower plaits distinct, aperture small, lip thickened, varicose, minutely denticulated within; dark purple-brown, promiscuously painted with a few red spots.

SOWERBY, Thesaurus Conch. p. 214. pl. 55. f. 110, 111.
Hab. St. Vincent's, West Indies.

The concentric ribs of this little species range somewhat obliquely, the interstices being finely latticed with small ridges.

V O L U T A.

	Platn.	Specien.		Platn.	Specien.
<i>abyssicola, Adams & Reeve</i>	XXII.	58	<i>innexa, Reeve</i>	IV.	9
<i>ancilla, Solander</i>	XVII.	39	<i>interpuncta, Martyn</i>	VI.	12
<i>angulata, Swainson</i>	XV.	35	<i>Junonia, Chemnitz</i>	XX.	50
<i>anna, Lesson</i>	XXI.	51	<i>levigata, Lamarck</i>	VIII.	18
<i>Arabica, Gmelin</i>	XVII.	38	<i>Lapponica, Linnæus</i>	VI.	12
<i>aulica, Solander</i>	II.	4	<i>lineata, Leach</i>	XVIII.	43
<i>Beckii, Broderip</i>	XVIII.	42	<i>luteostoma, Chemnitz</i>	XX.	47
<i>Brasiliana, Solander</i>	XV.	34	<i>lyraformis (Mitra), Swains.</i>	XX.	48
<i>bullata, Swainson</i>	XXI.	55	<i>lyrata, Sowerby</i>	XXI.	51
<i>carneolata, Lamarck</i>	VIII.	18	<i>maculata, Swainson</i>	XIII.	30
<i>cassidula, Reeve</i>	XXII.	60	<i>Magellanica, Chemnitz</i>	XIV.	33
<i>chlorosina, Lamarck</i>	VIII.	18	<i>magnifica, Chemnitz</i>	I.	2
<i>chrysothoma, Swainson</i>	XX.	47	<i>mamilla, Gray</i>	XIX.	44
<i>colocynthis, Chemnitz</i>	XV.	34	<i>marmorata, Swainson</i>	XIII.	31
<i>concinna, Broderip</i>	XXI.	53	<i>megaspira, Sowerby</i>	XX.	49
<i>coronata, Kiener</i>	XIX.	46	<i>milis, Lamarck</i>	V.	11
<i>costata, Swainson</i>	XXI.	51	<i>Mitraformis, Lamarck</i>	III.	7
<i>Cunningii, Broderip</i>	I.	1	<i>multicostata, Broderip</i>	III.	7
<i>Cylleneformis, Sowerby</i>	XXII.	57	<i>musica, Linnæus</i>	VIII.	18
<i>cymbiola, Chemnitz</i>	XIX.	46	<i>nasica, Schubert</i>	XV.	35
<i>Delessertiana, Petit</i>	III.	5	<i>nivosa, Lamarck</i>	VII.	17
<i>Dufrenoyi, Donovan</i>	XV.	35	<i>nodulosa, Lamarck</i>	VIII.	18
<i>dubia, Broderip</i>	XXII.	59	<i>Norrisii, Sowerby</i>	VII.	15
<i>elongata, Swainson</i>	XVII.	38	<i>nucleus, Lamarck</i>	XVIII.	41
<i>exoptanda, Sowerby</i>	X.	22	<i>Pacifica, Solander</i>	XVII.	38
<i>fasciata, Schubert</i>	XVI.	37	<i>pallida, Gray</i>	XI.	24
<i>Ferussaci, Donovan</i>	X.	23	<i>papillaris, Sowerby</i>	IV.	10
<i>festiva, Lamarck</i>	XII.	28	<i>pellis-serpentis, Lamarck</i>	V.	11
<i>flamula, Wood</i>	XIX.	46	<i>perdicina, Megerle</i>	XVIII.	41
<i>flavicans, Gmelin</i>	XIX.	45	<i>piperata, Sowerby</i>	VII.	16
<i>fulgetrum, Sowerby</i>	VI.	13	<i>plicata, Dillywn</i>	VIII.	18
<i>fulminata, Lamarck</i>	VI.	14	<i>polyzonalis, Lamarck</i>	IX.	19
<i>fulva, Lamarck</i>	IX.	19	<i>prætexta, Reeve</i>	XII.	29
<i>fusiformis, Swainson</i>	III.	6	<i>pulchra, Sowerby</i>	XXI.	54
<i>gracilis, Swainson</i>	XVII.	40	<i>punctata, Swainson</i>	XXI.	52
<i>Guildingii, Sowerby</i>	XXII.	61	<i>pusio, Swainson</i>	IX.	19
<i>Guineaica, Lamarck</i>	VIII.	18	<i>radiata, Kiener</i>	XVIII.	43
<i>Guineensis, Chemnitz</i>	VIII.	18	<i>reticulata, Reeve</i>	XI.	25
<i>guttata, Reeve</i>	XXII.	56	<i>rudis, Gray</i>	X.	23
<i>harpa, Barnes</i>	I.	3	<i>rupestris, Gmelin</i>	VI.	14
<i>Hebræa, Linnæus</i>	IX.	20	<i>rutila, Broderip</i>	IV.	8
<i>imperialis, Lamarck</i>	XVI.	36	<i>scapha, Gmelin</i>	XVI.	37
<i>Indica, Sowerby</i>	VI.	12	<i>serpentina, Lamarck</i>	V.	11

INDEX.

	Plate.	Species.		Plate.	Species.
<i>signifer</i> , Broderip	XIX.	45	<i>turbinata</i> , Kiener	IX.	20
<i>Sophia</i> , Gray	X.	21	<i>Turneri</i> , Gray	XII.	27
<i>Sowerbyi</i> , Kiener	III.	6	<i>undulata</i> , Lamarck	XI.	26
<i>spectabilis</i> , Gmelin	XVII.	39	<i>vespertilio</i> , <i>Linnaeus</i>	V.	11
<i>stragulata</i> , Megerle	XVIII.	43	<i>vexillum</i> , <i>Chemnitz</i>	XIII.	32
<i>subnodosa</i> , Leach	XIV.	33	<i>virescens</i> , <i>Solander</i>	IX.	19
<i>sulcata</i> , Lamarck	VIII.	18	<i>volva</i> , <i>Chemnitz</i>	XI.	24
<i>thiarella</i> , Lamarck	VIII.	18	<i>volvacea</i> , Lamarck	XIX.	45
<i>tuberculata</i> , Swainson	XIV.	33	<i>zebra</i> , <i>Leach</i>	XVIII.	43

ERRATUM.

Pl. XIX. Sp. 46. To *V. symbiota*, add as synonyme *V. flammula*, Wood.

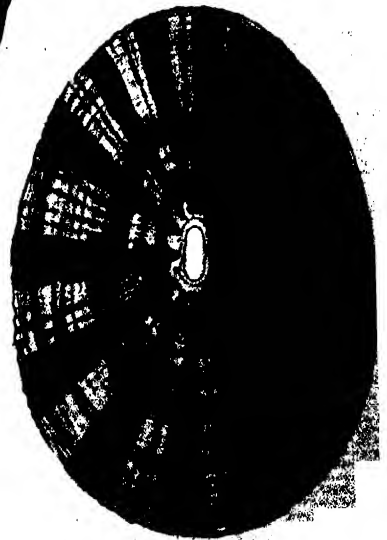
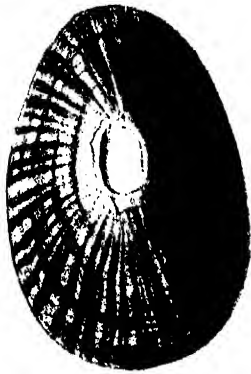
MONOGRAPH

OF THE GENUS

F I S S U R E L L A .

Art's finest pencil could but rudely mock
The painted Limpets broidered on a rock,
And those gay watery grots he would explore.

Small excavations on a rocky shore,
That seem like fairy baths or mimic wells,
Richly embossed with weeds and choicest shells,
As if her trinkets Nature chose to hide
Where nought invaded but the flowing tide.—*Taylor.*



FISSURELLA.

PLA

Genus FISSURELLA, Bruguière.

Species 1 (Fig. a and b. Mus. Cuming.)

Testa depresso-conica, ovata vel oblongo-ovata, clypeiformis, plerumque anticè attenuata, radiatim striata vel costata, summitate perforata, orificio oblongo, vel suborbiculari, lateribus nunc coarctato, nunc excavato, sæpissimè anticè inclinato.

Shell depressly conical, ovate or oblong-ovate, shield-shaped, generally attenuated anteriorly, radiately striated or ribbed, perforated at the summit, orifice oblong, or nearly orbicular, sometimes contracted, sometimes excavated at the sides, most frequently inclined anteriorly.

The *Fissurella*, or Key-hole Limpets, constitute an attractive group, distinguished rather for their beauty and variety of painting, than for any remarkable development of sculpture. The orifice at the summit of the shell, which constitutes the principal character of the genus, is mostly inclined anteriorly, that is, in the direction of that portion of the shell covering the head of the mollusc, and which is generally more or less attenuated. The orifice varies characteristically in form in different species, but not in individuals of the same species. It is mostly oblong, sometimes a little excavated at the sides, but more frequently contracted in the middle, in such a manner as to give a denticulated character to the margin. In one species, *F. aperta*, the orifice is considerably larger than in any other, and the animal, as figured by M. D'Orbigny, is seven or eight times longer than the shell; in another, *F. macroschisma*, the orifice is stretched, so to speak, nearly to the anterior basal edge. The sculpture consists of ribs or ridges radiating from the dorsal orifice to the base, and an agreeable pattern is sometimes produced by the development of concentric ridges, which are squamate at the point of crossing.

The largest and most brilliantly painted *Fissurella* are the western coast of South America. During Mr. Cuming's sojourn in that country, he collected several species on exposed rocks, at low water, larger and finer than any before known. At the Philippine Islands, on the contrary, Mr. Cuming observed only a few species of small size; nor were any collected during the voyage of the *Samarang* among the Islands of the Eastern Seas at all.

Chili and Peru.

FISSURELLA CHEMNITZII. *Fiss. testâ ovatâ, anticè attenuatâ, depressiusculâ, lateribus peculiariter compressâ, extremitatibus levatis; radiatim costatâ, costis rudibus, inequalibus, obsolete nodosis, hic illic tumidiusculis, orificio ovali, amplo; olivaceo-viridi et purpureo-roseo tinctâ et radiatâ.*

CHEMNITZ'S FISSURELLA. Shell ovate, attenuated anteriorly, rather depressed, peculiarly compressed at the sides, lifted at the extremities; radiately ribbed, ribs rugged, unequal, obsoletely nodose, rather swollen here and there, orifice oval, large; stained and rayed with olive green and purple-rose.

SOWERBY, Pro. Zool. Soc., 1834, p. 126. Conch. Illus. f. 55.

Hab. Benguela, W. Africa; Dr. Tams.

There can be no impropriety in dedicating this species to the author of the latter volumes of the 'Conchylien Cabinet;' but it is not identical with the figure of his predecessor (Martini, vol. i. pl. 11. f. 100), to which Mr. Sowerby refers it. The ribs are fewer in number and more unequal, whilst the orifice is totally different. To the specimen formerly in the Tankerville collection, is here added a figure of a smaller one in finer condition collected at Benguela by Dr. Tams.

For Species 2 see Plate IV.

Species 3. (Mus. Cuming.)

FISSURELLA NEGLECTA. *Fiss. testâ ovatâ, anticè attenuatâ, medio posticè levatâ, radiatim costatâ, costis rugosis, inequalibus, obsolete nodosis, summitatem versus eximè cancellatis, margine basali bifidè crenulato, orificio oblongo-ovato, lateribus subcoarctato; cinerascens, fasciis concentricis nigricantibus radiisque olivaceis subobscure variegatâ.*

THE NEGLECTED FISSURELLA. Shell ovate, attenuated anteriorly, raised posteriorly in the middle, radiately ribbed, ribs rugged and unequal, obsoletely nodose, delicately cancellated towards the summit, basal margin crenulated in a bifid manner, orifice oblong-ovate, slightly contracted at the sides; pale ash colour, somewhat obscurely variegated with blackish concentric bands and olive rays.

DESHAYES, Enc. Méth. vers, vol. ii. p. 138. Anim. sans vert. vol. vii. p. 601.

Fissurella Mediterranea, Gray.

Hab. Mediterranean.

The shell in this species is lifted up in the centre behind the orifice, which is situated on the anterior declining slope, and has a corresponding depression in the interior. About twenty of the radiating ridges are more prominent than the rest, and the basal margin is finely crenulated in a bifid manner.

Until the species was distinguished by M. Deshayes, in the Encyclopédie Méthodique, it was probably confounded with the *F. Græca*.

Species 4. (Mus. Cuming.)

FISSURELLA CRASSA. *Fiss. testâ oblongo-ovalâ, depresso-convexâ, ad utrumque latus subattenuatâ, crassâ, concentricè rudè striatâ, margine inequali, orificio oblongo, limbo peculiariter excavato, lateribus valdè coarctatis, quasi dentatis; flavido-fuscâ, obscurè nigricante radiatâ, intus corrugatâ et pallidè rosacèâ.*

THE THICK FISSURELLA. Shell oblong-ovate, deeply convex, slightly attenuated at the sides, thick, concentrically rudely striated, uneven at the margin, orifice oblong, peculiarly excavated round the edge, very much contracted at the sides, as if toothed; yellowish brown, obscurely rayed with black, wrinkled and pinkish in the interior.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. 7. p. 592.

Fissurella clypeiformis, Sowerby.

An endemic? *F. depressa*, Lamarck.

Hab. Valparaiso (on rocks at low water); Cuming.

M. Deshayes has some doubt of this being Lamarck's *F. crassa*, but it answers with remarkable accuracy to his description of that species.

Species 5. (Mus. Cuming.)

FISSURELLA LATA. *Fiss. testâ orbiculari-ovalâ, anticè vix attenuatâ, elevatiusculâ, radiatim obtusè liratâ, liris inequaliter nodosis, orificio parvo, lateribus subexcavato; olivaceo-cinerascente, intensè purpureo-roseo radiatâ.*

THE BROAD FISSURELLA. Shell orbicularly ovate, very slightly attenuated anteriorly, rather elevated, radiately obtusely ridged, ridges unequally nodose, orifice small, a little excavated at the sides; olive-ash, rayed with dark purple-rose.

SOWERBY, Pro. Zool. Soc., 1834, p. 124. Conch. Illus. f. 63.

Hab. Island of St. Mary, Chili, (in exposed places on the rocks at low water); Cuming.

This approaches rather to the *F. maxima* than to *F. picta*, with which Mr. Sowerby compares it, but may be readily distinguished from either.

Species 6. (Mus. Cuming.)

FISSURELLA PICTA. *Fiss. testâ ovalâ, elevatiusculâ, radiatim liratâ, liris rudibus angustis, interdum nodosis, interdum ferè obsoletis, orificio oblongo-ovalato, subnigro, lateribus vix excavatis; cinerascente-albâ, purpureo-nigro lineari-radiatâ, circa aperturam cretaceo-albâ.*

THE PAINTED FISSURELLA. Shell ovate, rather elevated, radiately ridged, ridges rude, narrow, sometimes nodose, sometimes almost obsolete, orifice oblong-ovate, rather narrow, sides slightly excavated; ash-white, radiated with lines of purple-black, chalk-white around the aperture.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. 7. p. 590.
Patella picta, Gmelin.

Hab. Strait of Magalhaens; Falkland Islands.

It is not improbable that two or three species have been referred by different authors to the *Patella picta* of Gmelin. Lamarck's description of its purple-violet colouring may have been taken from a worn specimen, to which the rich dark painting of the specimen here represented would no doubt have turned upon exposure to the weather.

Species 7. (Mus. Cuming.)

FISSURELLA DARWINII. *Fiss. testâ ovalâ, anticè subattenuatâ, tenuiculâ, infra summitatem leviter e radiatim liratâ, liris tenuibus, crebris, orificio oblongo-ovalato; superne albâ, basin versus intensè cinerèâ, nigro lineari-radiatâ, facies alba aut perpaucis aut pluribus radiatâ.*

DARWIN'S FISSURELLA. Shell ovate, a little attenuated anteriorly, rather thin, slightly compressed, summit, radiately ridged, ridges thin, slightly waved, orifice oblong-oval; upper part, dark ash towards the base, black lines, and more or less with white.

Hab. Straits of Magalhaens; Darwin.

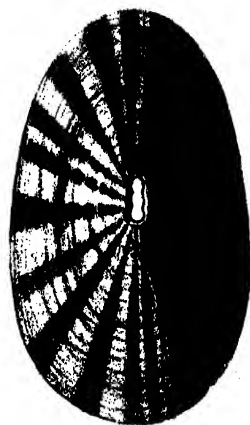
An interesting new species of which were collected by Mr. Darwin in the



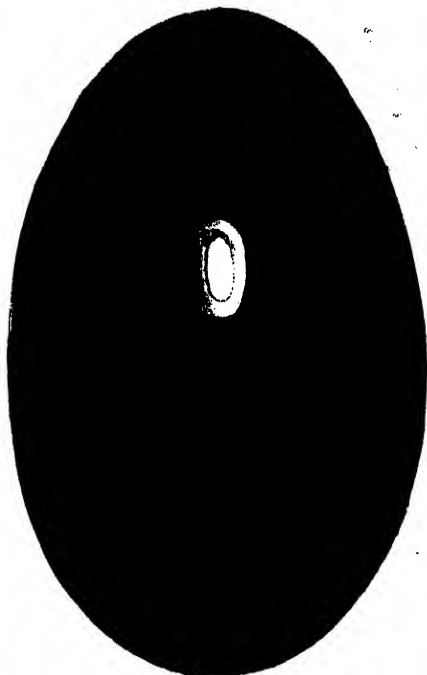
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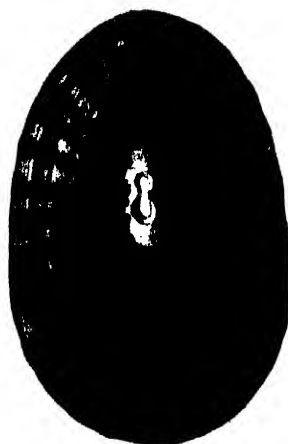
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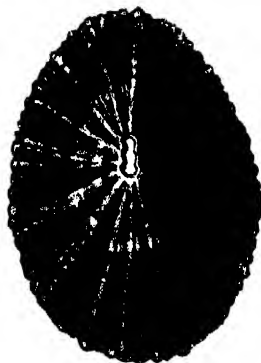
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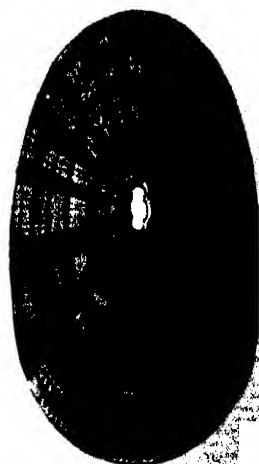
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12.



14.



13.

FISSURELLA.

PLATE II.

Fig. 8.

An interesting variety of Sp. 3. *F. neglecta*, in which the shell is delicately tinged with pink in the absence of the olive-green colouring.

For Sp. 8. see Pl. IV.

Species 9. (Mus. Cuming.)

FISSURELLA PULCHRA. *Fiss. testā oblongo-ovata, antice attenuata, crassiusculā, convexo-depressa, concentricè tenuistriatā, orificio oblongo, lateribus medio excavatis; purpureo-cinerascente, purpureo-rufa circa orificium lentiginosā, radiis rufo-purpureis subobscurè pictā.*

THE BEAUTIFUL FISSURELLA. Shell oblong-ovate, attenuated anteriorly, rather thick, convexly depressed, concentrically finely striated, aperture oblong, sides excavated about the middle; purple-ash, spotted with purple-red around the orifice, and obscurely painted with rays of the same colour.

SOWERBY, Pro. Zool. Soc., 1834, p. 124.

Hab. Valparaiso (on the rocks); Cuming.

The purple-red freckled painting around the orifice is a very characteristic feature in this species.

Species 10. (Fig. 10 and 12, Mus. Cuming.)

FISSURELLA LIMBATA. *Fiss. testā oblongo-ovata, antice vix attenuata, depressiusculā, lateribus interdum paululum compressā, levigatā, lineis concentricis incrementi plus minusve distinctis, orificio oblongo, lateribus medio subconstrictis; cinerascente-albā, purpureo-roseo radiatā, interdum purpureo-carnatā, obscurè radiatā, nigro circa aperturam tinctā, limbo basali purpureo-nigro.*

THE MARGINED FISSURELLA. Shell oblong-ovate, slightly attenuated anteriorly, rather depressed, sometimes a little compressed at the sides, smooth, concentric lines of growth more or less distinct, orifice oblong, sides slightly constricted in the middle; ash-white, rayed with purple-rose, sometimes purple-flesh colour stained with black around the aperture, basal margin purple-black.

SOWERBY, Pro. Zool. Soc., 1834, p. 128.

Hab. Valparaiso (on the rocks); Cuming.

Although the two specimens figured present such a different aspect, they are varieties of the same species.

Species 11. (Mus. Cuming.)

FISSURELLA NIGRA. *Fiss. testā ovali, elevatiusculā, crassā, concentricè striatā, liris obsoletis radiatā, orificio ovali, margine excavato; purpureo-nigrā, fasciis concentricis, lineisque numerosissimis subtilibus radiantibus, saturatè tinctā, limbo basali cinerascente.*

THE BLACK FISSURELLA. Shell oval, rather elevated, thick, concentrically striated, and radiated with obsolete ridges, orifice oval, with the edge excavated; purple-black, stained with dark concentric bands and numerous fine radiating lines, basal margin pale-ash.

LESSON, Voy. de la Coquille, p. 412.

Fissurella violacea, Eschscholtz.

Fissurella grandis, Sowerby.

Hab. Valparaiso and Island of Chiloe (attached to the under surface of stones on the shore); Cuming.

The colouring of this fine species is of a purplish inky hue, nearly black.

For Species 12. see Pl. IV.

Species 13. (Mus. Cuming.)

FISSURELLA ORIENS. *Fiss. testā oblongo-ovata, depressiusculā, radiatim multiliratā, liris angustis, crebris, subobscuris, orificio oblongo, lateribus medio excavatis; cinerascente, purpureo-nigro radiatā.*

THE RISING SUN FISSURELLA. Shell oblong-ovate, rather depressed, radiately many-ridged, ridges narrow, close-set, rather obscure, orifice oblong, sides excavated in the middle; pale ash, rayed with purple-black.

SOWERBY, Pro. Zool. Soc., 1834, p. 124.

Hab. Valparaiso (attached to rocks); Cuming.

This species approaches certain varieties of the *F. limbata* in general aspect, but may be readily distinguished by its more depressed growth, and obscure sculpture of ridges; and the orifice is broader.

M. D'Orbigny very erroneously quotes this as a synonyme of *F. picta*.

FISSURELLA.—PLATE II.

Species 14. (Mus. Cuming.)

FISSURELLA COSTATA. *Fiss. testâ suborbiculari-ovatâ, anticè attenuatâ, radiatim rugoso-liratâ, liris obtusè nodosis, orificio parviusculo, oblongo, lateribus medio paululum excavatis; flavido-cinerascente, fusco-olivaceo radiatâ.*

THE RIBBED FISSURELLA. Shell somewhat orbicularly ovate, attenuated anteriorly, radiately roughly ridged, ridges obtusely nodose, orifice rather small, oblong,

sides a little excavated in the middle; yellowish-ash, rayed with brownish-olive.

LESSON, Voy. de la Coquille, p. 410; Illus. Zool. pl. 12.

Fissurella Chilensis, Sowerby.

An cadem? *Fissurella rudis*, Deshayes.

Hab. Valparaiso (in exposed situations on the rocks at low water); Cuming.

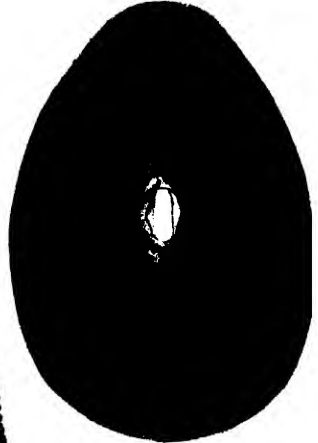
The orifice inclines somewhat anteriorly in this species. It is very abundant on the coast of Chili.



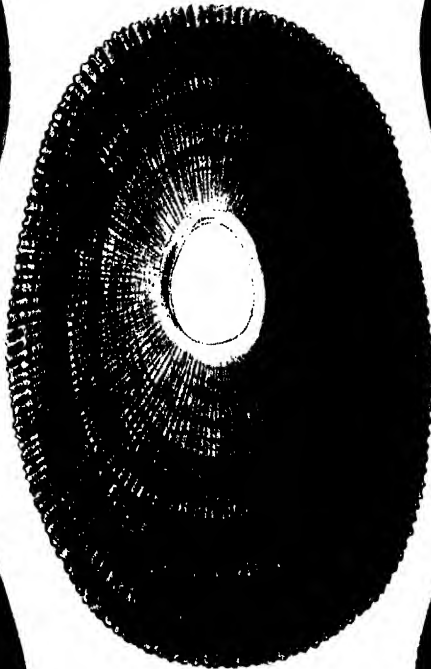
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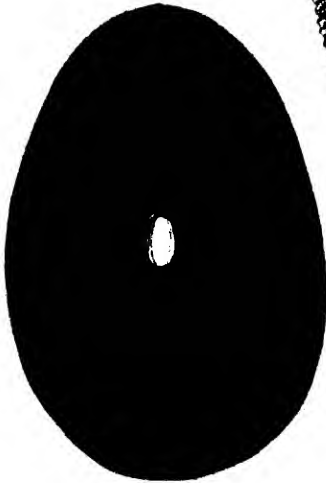
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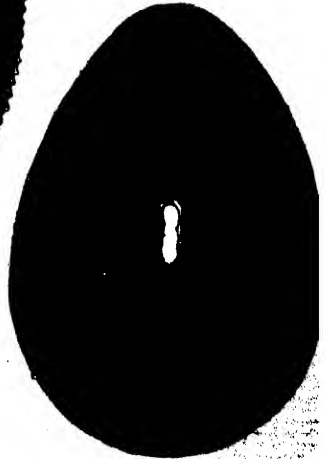
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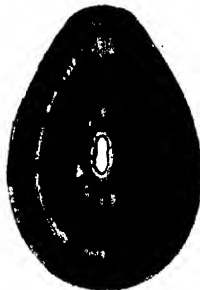
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21.

FISSURELLA.

PLATE III.

Species 15. (Mus. Cuming.)

FISSURELLA NATALENSIS. *Fiss. testā oblongo-ovata, antice attenuata, subcompressa, radiatim costata, costis inequalibus, subobsolete nodosis, orificio oblongo, subangusto, lateribus medio paululum excavatis; albida, radiis violaceo-nigricantibus picta.*

THE NATAL FISSURELLA. Shell oblong-ovate, attenuated anteriorly, rather compressed, radiately ribbed, ribs uneven and rugged, somewhat obsoletely nodose, orifice oblong, rather narrow, sides a little excavated in the middle; whitish, painted with violet-black rays.

KRAUSS, Sudafrick. Moll. p. 60. pl. 4. f. 8.

Hab. Port Natal, South Africa.

The concentric lines of growth have very much the appearance, here and there, of festooned ridges. The species is frequently of a rather darker greyish or greenish hue than the specimen here represented.

Species 16. (Mus. Cuming.)

FISSURELLA BRIDGESII. *Fiss. testā ovata, antice subattenuata, crassiuscula, depressa, concentricè subtilissimè striatā, orificio oblongo, latiusculo, lateribus medio excavatis; fusco-purpureo et cinereo-nigricante concentricè fasciatā, obscure albiradiatā, margine basali latissimo, purpureo.*

BRIDGES' FISSURELLA. Shell ovate, slightly attenuated anteriorly, rather thick, depressed, concentrically very finely striated, orifice oblong, rather wide, sides excavated in the middle; concentrically banded with brownish purple and ashy black, obscurely white-rayed, basal margin very broad, purple.

Hab. Quintero, Chili (on the rocks); Bridges.

This fine species approaches the *F. latimarginata* in general aspect, but will be found to differ materially on comparison. It is of thicker growth, not radiately striated, the orifice differs in being larger and excavated at the sides, and the painting is of a lighter purple-ash.

17. (Mus. Cuming.)

FISSURELLA CUMINGII. *Fiss. testā ovata, antice attenuata, depressa, radiatim costata, costis obtusis, inaequalibus, obscure squamato-nodosis; purpurascens-cinereis*

ruginea, intense purpureo radiali, circa orificium alba, obscure sparsim punctata, margine basali latissimo, fulvo-cinerascente, purpureo maculata.

CUMING'S FISSURELLA. Shell ovate, attenuated anteriorly, depressed, radiately ribbed, ribs obtuse, unequal, obscurely squamately nodose; purple-ash or rust-colour, rayed with deep purple, white around the orifice, sprinkled with a few obscure dots, basal margin very broad, fulvous ash, blotched with purple.

Hab. Quintero, Chili; Bridges.

Another interesting new species, collected by Mr. Bridges in the same locality with the preceding, in which the coloured margin of the base is as broad as in the *F. latimarginata*. I have the pleasure of naming it after Mr. Cuming in honour of his productive researches in this genus along the Western Coast of South America, which have been so successfully followed up by Mr. Bridges.

Species 18. (Mus. Cuming.)

FISSURELLA CRENULATA. *Fiss. testā oblongo-ovata, subirregulari, depresso-convexa, radiatim subtiliter et creberrimè liratā, liris transversim subtilissimè obsolete squamato-striatis, orificio amplo, suborbiculari, margine basali crenulato; rosaceo-fulva.*

THE CRENULATED FISSURELLA. Shell oblong-ovate, somewhat irregular, deeply convex, radiately finely and very closely ridged, ridges transversely very finely striated with obsolete scales, orifice large, nearly orbicular, basal margin crenulated; pinkish fulvous-colour.

SOWEBBY, Tankerville Catalogue, App. p. vi.

Hab. Monterey, Upper California.

This remarkable species stands alone, no other having been discovered with which it would profit to constitute any comparison.

Species 19. (Mus. Cuming.)

FISSURELLA LATIMARGINATA. *Fiss. testā ovata, antice attenuata, depressa, medio elevatiuscula, radiatim multistriatā, orificio oblongo-ovato; intense purpureo-brunneo, margine basali latissimo, purpureo-brunneo.*

THE WIDE-EDGED FISSURELLA. Shell ovate, attenuated

FISSURELLA.—PLATE III.

anteriorly, depressed, rather elevated in the middle, radiately many-striated, orifice oblong-ovate; very dark purple-brown, basal margin very broad, purple-brown.

SOWERBY, *Pro. Zool. Soc.* 1834, p. 126. *Conch. Illus.* f. 69.
Hab. Valparaiso and Iquiqui, Peru (on the rocks); Cuming.

Distinguished by its deep purple-brown or chocolate colouring, and broad dark-coloured base.

Species 20. (Mus. Cuming.)

FISSURELLA BIRADIATA. *Fiss. testā ovalē, anticē acuminato-attenuatā, depressā, medio elevatiusculā, radiatim profusē striatā, striis tumidiusculis, orificio oblongo, lateribus medio coarctatis; intensē cinereo-purpureā, radiis pallidis, quorum uno ad utrumque latus magis conspicuo, obscurē notatā, margine basali latiusculo, intensē cinereo-purpureo.*

THE TWO-RAYED FISSURELLA. Shell ovate, acuminate attenuated anteriorly, depressed, rather elevated in the middle, radiately profusely striated, striæ somewhat swollen, orifice oblong, sides contracted in the middle; dark ash-purple, obscurely marked with light rays, one of which on each side is more conspicuous than

the rest, basal margin rather broad, very dark ash purple.

PREMBLY, *Sowerby, Pro. Zool. Soc.* 1834, p. 124.

Hab. Valparaiso and Iquiqui, Peru (under stones on the shore); Cuming.

The rays of this species are very obscure, with the exception of one on each side diverging from the denticulated edge of the orifice.

Species 21. (Mus. Cuming.)

FISSURELLA BELLA. *Fiss. testā depresso-convexā, medio elevatiusculā, anticē acuminato-attenuatā, radiatim obscure sulcatā, margine basali angusto; cinereo-fusca, saturatē et pallidē alternatim concentricē fasciatā, purpureo-lacco vividē radiatā.*

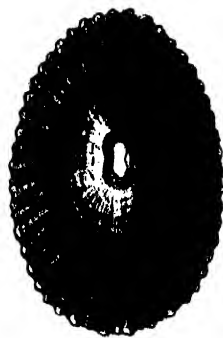
THE PRETTY FISSURELLA. Shell deeply convex, rather elevated in the middle, acuminate attenuated anteriorly, radiately obscurely grooved, basal margin narrow, orifice oblong; ash-brown, banded concentrically alternately lighter and darker, rayed with bright crimson lake.

Hab. Cape Horn; Darwin.

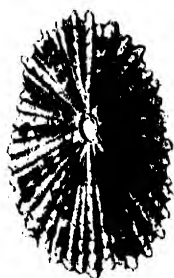
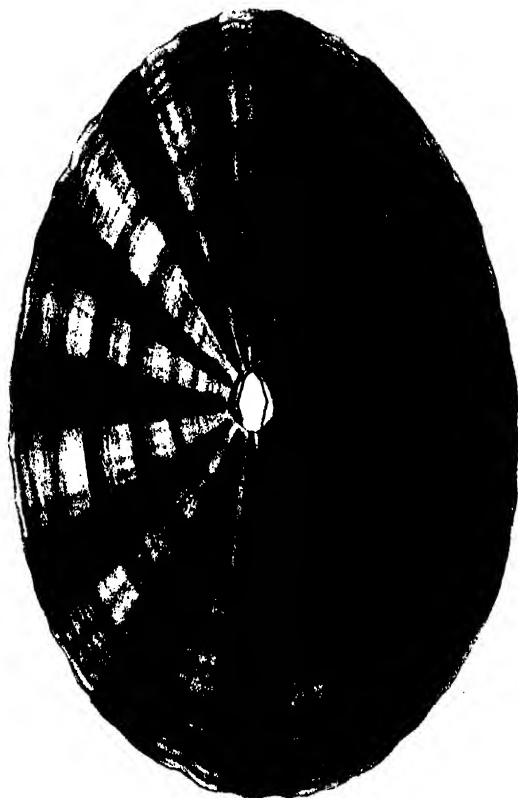
A comparatively smooth species, conspicuously painted with thirteen purple-lake rays.



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25.

FISSURELLA.

PLATE IV.

Species 2. (Mus. Cuming.)

FISSURELLA VOLCANO. *Fiss. testā ovato-conicā, antice viz attenuatā, radiatim costatā, costis rudibus, inaequalibus, hic illic majoribus, orificio oblongo; albidā, roseo radiatā, radiis nigropunctatis, interdum roseā, purpureo-radiatā, circa orificium nigropunctatā.*

THE VOLCANO FISSURELLA. Shell ovately conical, slightly attenuated, anteriorly rather thick, radiately ribbed, ribs rude, uneven, here and there larger, orifice oblong; whitish, rayed with rose, rays dotted with black, sometimes rose, rayed with purple, black-dotted around the orifice.

Hab. Santa Barbara, California; Hinds.

An elevated conical shell varying somewhat in colour, but similarly designed, collected by Capt. Sir Edward Belcher, and his assistant-surgeon Mr. Hinds, during the voyage of the Sulphur.

Species 8. (Mus. Cuming.)

FISSURELLA NIGROPUNCTATA. *Fiss. testā ovatā, subconicā, crassā, radiatim costatā, costis rudibus, inaequalibus, subacutis, margine basali acutè crenulato, orificio oblongo, lateribus coarctato; virescente-albā, interruptè intensè anthracinā.*

THE BLACK-DOTTED FISSURELLA. Shell ovate, somewhat conical, thick, radiately ribbed, ribs rude, uneven, rather sharp, basal margin sharply crenulated, orifice oblong, contracted at the sides; greenish-white, ribs painted in an interrupted manner with very dark coal-black.

SOWERBY, Pro. Zool. Soc., 1834, p. 125.

Hab. Gallapagos and Lobos Island, (under stones on the shore); Cuming.

The interior of the shell is also of a sea-green colour, and it is mostly eroded on the outside in the vicinity of the orifice.

Species 12. (Mus. Cuming.)

ELLA VIRESCENS. *Fiss. testā ovatā, elevatiusculā, radiatim costatā, costis subinaequalibus, basin versus tumidiusculis, orificio latè oblongo, medio paululum coarctato; caeruleo-viridi, circa orificium albidā, roseo sparsim tinctā, intus virescente.*

THE GREENISH FISSURELLA. Shell ovate, rather elevated, radiately ribbed, ribs somewhat uneven, rather swollen towards the base, orifice broadly oblong, a little contracted in the middle; bluish-green, white around the orifice, sparingly pink-stained, interior greenish.

SOWERBY, Pro. Zool. Soc. 1834, p. 125.

Hab. Panama (in exposed situations on rocks at low water); Cuming.

The orifice is rather broad in this species, and characterised by a small denticular contraction on each side.

Species 22. (Mus. Cuming.)

FISSURELLA MAXIMA. *Fiss. testā ovatā, depressiusculā, crassā, radiatim liratā, liris subnodosis, celatè subobsoletis, margine basali undulato, orificio rotundato-ovato; virescente-albā aut fulvescente, purpureo-lacco conspicuè radiatā.*

THE VERY LARGE FISSURELLA. Shell ovate, rather depressed, thick, radiately ridged, ridges slightly nodose, somewhat obsolete with age, basal margin undulated, orifice rotundately ovate; greenish-white or light fulvous, conspicuously rayed with purple-lake.

SOWERBY, Pro. Zool. Soc. 1834, p. 123.

Hab. Valparaiso (on exposed rocks and under stones at low water); Cuming.

In addition to the magnificent specimen here figured from Valparaiso, Mr. Cuming possesses one of smaller size from Cape Horn, in which the radiating ridges are more prominently developed and obscurely noduled.

Species 23. (Mus. Cuming.)

FISSURELLA BARBADENSIS. *Fiss. testā oblongo-ovatā, subconicā, lateribus interdum subcompressā, radiatim costatā, costis inaequalibus, acutiusculis, squamoso-asperis, decem ad duodecim prominentioribus, orificio suborbiculari; lutescente-albā, maculis irregularibus nigris radiatā, interdum roseā, intus virescente.*

THE BARBADOES FISSURELLA. Shell oblong-ovate, rather conical, sometimes a little compressed at the sides, radiately ribbed, ribs uneven, rather sharp, bristled with scales, ten to twelve ribs more prominent than

FISSURELLA.—PLATE IV.

the rest, orifice nearly orbicular; yellowish-white, rayed with irregular black spots, sometimes pinkish, interior greenish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 595.

Patella Barbadiensis, Gmelin.

Hab. West Indies.

This is the ordinary type of the species, which is extremely variable in colour, sometimes rose or purple.

Species 24. (Mus. Cuming.)

FISSURELLA NODOSA. *Fiss. testā ovato-conicā, lateribus subcompressā, radiatim costatā, costis squamato-nodosis, nodis conspicuis, valde elevatis, orificio oblongo, latiusculo, medio coarctato; virescente-albā.*

THE NODOSE FISSURELLA. Shell ovately conical, a little compressed at the sides, radiately ribbed, ribs squamately nodose, nodules conspicuous, very elevated, orifice oblong, contracted in the middle; greenish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 593.

Patella nodosa, Born.

Patella spinosa, Gmelin.

Patella Jamaicensis, Gmelin.

Hab. West Indies.

Readily to be distinguished from all other species of the genus by its very prominent erect squamate nodules.

Species 25. (Mus. Cuming.)

FISSURELLA VIRIDULA. *Fiss. testā ovatā, subconicā, antice inclinatā, costis subrudibus lirisque obsolete nodosis radiatā, interstitiis in adolescentiā cancellatis, orificio oblongo, medio coarctato, margine basali crenulato; viridi, costis albis, orificii limbo cæruleo.*

THE GREEN FISSURELLA. Shell ovate, rather conical, inclined anteriorly, rayed with somewhat rude obscurely noduled ribs and ridges, interstices in the young shell cancellated, orifice oblong, contracted in the middle, basal edge crenulated; green, ribs white, edge of the orifice blue.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 596.

Testa juvenis. *Fissurella bicolor*, Adams.

Hab. Nevis, West Indies (attached to stones); Power.

The sculpture of this species, which in the young state is noduled and finely cancellated, becomes nearly obliterated with age.



26. a.



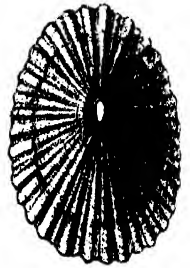
26. c.



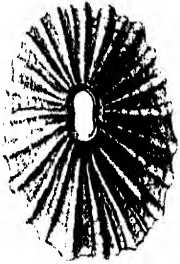
26. b.



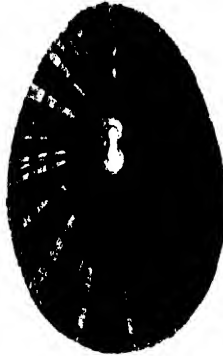
26. d.



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FISSURELLA.

PLATE V.

Species 26. (Fig. a, b, c, d, Mus. Cuming.)

FISSURELLA PERUVIANA. *Fiss. testā ovatā, anticē attenuatā, elevatiusculā, interdum conicā, radiatim liratā, liris squamato-nodosis, interdum obsolete, orificio ovato, parvo; albidā, aut vividē roseā, aut purpureo-fuscescente, fusco vel purpureo-nigricante radiatā, et circa orificium eximie lentiginosā.*

THE PERUVIAN FISSURELLA. Shell ovate, attenuated anteriorly, rather elevated, sometimes conical, radiately ridged, ridges squamately nodose, sometimes obsolete, orifice ovate, small; whitish or bright rose, or light purple brown, rayed with brown or purple-black, and delicately freckled around the orifice.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 599.

Fissurella affinis, Gray, Sowerby.

Fissurella subrotunda, Deshayes.

Hab. Lobos Island, Valparaiso and Iquique, Peru; Cuming.

So variable is this species in colouring it is almost in vain to describe it, yet there is a marked affinity of design in all the varieties, four of which are selected for illustration.

Species 27. (Mus. Cuming.)

FISSURELLA ALABASTRITES. *Fiss. testā ovatā, depresso-conicā, radiatim costatā, costis inequalibus, subamplis, orificio oblongo, latiusculo, medio subcoarctato; albā, lineā intensē cæruleā circa orificium intus extusque, orificii limbo virescente.*

THE ALABASTER FISSURELLA. Shell ovate, depressly conical, radiately ribbed, ribs uneven, rather large, orifice oblong, rather broad, slightly contracted in the middle; white, with a dark blue line around the orifice within and without, edge of the orifice greenish.

Hab. Cape de Verd Islands.

A pure white rudely ribbed shell, in which the orifice is large, and of a pale sea-green colour around the edge, bordered by a very deep indigo blue line.

Species 28. (Mus. Cuming.)

FISSURELLA GLAUCOPIS. *Fiss. testā ovatā, depresso-conicā, radiatim costatā, costis subplanatis, obsolete nodosis, lirā parvā intermediā, orificio parvo, ovali; albā, orificii limbo intensē cæruleo.*

THE OWL-EYED FISSURELLA. Shell ovate, depressed, conical, radiately ribbed, ribs rather flattened, obsoletely nodose, with a small intermediate ridge, orifice small, oval; white, edge of the orifice deep indigo blue.

Hab. Cape de Verd Islands.

The similarity between this and the preceding species, both from the same locality, is remarkable; yet they differ materially in the shape and size of the dorsal orifice, and Mr. Cuming possesses several specimens of both, without any intermediate modification of a character which appears to be always constant in the same species.

Species 29. (Mus. Cuming.)

FISSURELLA NIMBOSA. *Fiss. testā ovatā, elevatā, decliviconicā, radiatim liratā, liris inequalibus, orificio oblongo, medio coarctato; virescente-albā, nigricante-viridi radiatā.*

THE RAINY FISSURELLA. Shell ovate, elevated, steeply conical, radiately ridged, ridges uneven, orifice oblong contracted in the middle; greenish-white, rayed with very dark green.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 591.

Patella nimbose, Linnæus.

Hab. West Indies. Venezuela; Dyson.

The colouring of this species varies from brown to green.

Species 30. (Mus. Cuming.)

FISSURELLA ASPERA. *Fiss. testā ovatā, subconicā, anticē inclinatā, creberrimē radiatim costellatā, costellis liris concentricis squamatis eximie clathratis, orificio suborbiculari; fulvo-cinereā, liris cinereo-nigris.*

THE ROUGH FISSURELLA. Shell ovate, somewhat conical, inclined anteriorly, very closely radiately ribbed, ribs delicately latticed with concentric squamate ridges, orifice nearly orbicular; light fulvous ash, ridges cinder-black.

SOWERBY, Pro. Zool. Soc., 1834. p. 127.

Hab. Pacosmayo, Peru.

Delicately sculptured, the transverse ridges passing over radiating ones in squamate festoons.

FISSURELLA.—PLATE V.

Species 31. (Mus. Cuming.)

FISSURELLA MACROTREMA. *Fiss. testâ ovatâ, interdum elevatiusculâ, radiatim striato-sulcatâ, orificio elongato-oblongo, medio coarctato; virescente, rufo, fusco, vel purpureo-nigro radiatâ, intus virescente.*

THE LONG-SLIT FISSURELLA. Shell ovate, sometimes rather elevated, radiately striately grooved, orifice elongately oblong, contracted in the middle; greenish, rayed with red, brown, or purple black, interior pale green.

SOWERBY, Pro. Zool. Soc., 1834. p. 125.

Hab. Gallapagos Islands; Cuming.

Exceedingly variable in colouring, but with always more or less of red and green.

Species 32. (Mus. Cuming.)

FISSURELLA COARCTATA. *Fiss. testâ ovatâ, antice attenuatâ, radiatim creberrimè striatâ, orificio oblongo, medio valdè coarctato; virescente-albâ, circa orificium lineis nigris creberrimè radiatâ.*

THE CONTRACTED FISSURELLA. Shell ovate, attenuated anteriorly, radiately very closely striated, orifice oblong, very much contracted in the middle; greenish white, very closely rayed with black lines around the orifice.

KING, Zoological Journ. vol. v. p. 339.

Hab. Benguela, West Africa.

The chief peculiarity of this species consists in the orifice being more than usually contracted on each side. The painting is also peculiar.





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37.



FISSURELLA.

PLATE VI.

Species 33. (Mus. Cuming.)

FISSURELLA SCUTELLA. *Fiss. testâ trapeziformi-ovata, valde depressâ, lateribus medio subcompressis, extremitatibus levatiusculis, concentricè elevato-striatâ, interstitiis incis, orificio oblongo, subamplo; spadiceo-albâ, purpureo-fuscescente radiatâ.*

THE LITTLE PLATTER FISSURELLA. Shell trapeziformly ovate, very depressed, sides slightly compressed in the middle, extremities a little lifted, concentrically elevatedly striated, interstices engraved, orifice oblong, rather large; fawn white, rayed with light purple-brown.

GRAY, Brit. Mus., Sowerby, Cat. *Fissurella*, No. 42. Conch. Illus. f. 34.

Fissurella trapezina, Sowerby (Pro. Zool. Soc., 1834).
Hab. Raines' Island, Torres Straits; Ince.

A singular little broad flatted species with a rather large orifice.

Species 34. (Mus. Cuming.)

FISSURELLA SAGITTATA. *Fiss. testâ ovatâ, depressiusculâ, lateribus subcompressâ, radiatim sulcatâ, orificio oblongo, vividè rosaceo et albo radiatâ, radiis albis punctis nigricantibus sagittatis notatis.*

THE ARROW-MARKED FISSURELLA. Shell ovate, rather depressed, a little compressed at the sides, radiately grooved, orifice oblong; rayed with bright pink and white, the white rays being marked with blackish arrow-head dots.

Hab. Cape of Good Hope.

A pretty pink-rayed shell in which the uncoloured interstitial rays are marked with dark arrow-head spots.

Species 35. (Mus. Cuming.)

FISSURELLA DUBIA. *Fiss. testâ ovatâ, anticè attenuatâ, depressâ, radiatim costatâ, liris tenuibus concentricis numerosis finitâ, orificio oblongo, latiusculo, medio coarctato; olivaceo-cinereo irregulariter tinctâ et radiatâ.*

THE DOUBTFUL FISSURELLA. Shell ovate, attenuated anteriorly, depressed, radiately ribbed, and frilled with numerous fine concentric ridges, orifice oblong,

rather broad, contracted in the middle; irregularly stained and variegated with olive-ash.

Hab. Port Natal.

Very closely allied to *F. Natalensis*, but of much more depressed growth.

Species 36. (Mus. Cuming.)

FISSURELLA HIA NTULA. *Fiss. testâ ovatâ, lateribus peculiariter compressâ, extremitatibus levatis, radiatim rugoso-liratâ, interstitiis subobsoletè cancellatis, orificio amplo, oblongo, latiusculo; albâ, pallidè spadiceo tinctâ, cinereo-nigricante prope marginem subobscurè radiatâ.*

THE GAPING FISSURELLA. Shell ovate, peculiarly compressed at the sides with the extremities lifted up, radiately roughly ridged, interstices somewhat obsoletely cancellated, orifice large, oblong, rather broad; whitish, stained with light fawn colour, rather obscurely rayed near the margin with ashy-black.

LAMARCK, Anim. sansvert. (Deshayes' edit.) vol. vii. p. 597.

Fissurella Javanicensis, Sowerby (not of Lamarck.)

Hab. Cape of Good Hope; Hannah.

There can be little doubt, as suggested by M. Deshayes, that this species, which Mr. Sowerby assigns to Lamarck's *F. Javanicensis*, belongs to *F. hiantula* of the same author, and not that which is figured for it in the Conchological Illustrations.

Species 37. (Mus. Cuming.)

FISSURELLA ~~SCUTELLA~~. *Fiss. testâ oblongo-ovatâ, anticè subattenuatâ, depressâ, lateribus subcompressâ, radiatim costatâ et liratâ, costis lirisque rugosis, subacutis, striis concentricis clathratis, orificio oblongo; purpureo-nigrâ, orificii limbo albo.*

THE BLACK FISSURELLA. Shell oblong-ovate, slightly attenuated anteriorly, depressed, a little compressed at the sides, radiately ribbed and ridged, ribs and ridges rugose, rather sharp, latticed with concentric striae, orifice oblong; purple-black, edge of the orifice

L. and Besch. *Fissurella*, pl. 2. f. 2.

Hab. Southern Chili.

The colouring becomes slightly mottled at the basal edge.

Species 38. (Mus. Cuming.)

FISSURELLA GRISEA. *Fiss. testâ ovatâ, depressiusculâ, levigatâ, lineis concentricis incrementi subirregularibus, orificio parviusculo, oblongo; cinereo-griseâ, basin versus violaceâ, obscure radiatâ.*

THE GREY FISSURELLA. Shell ovate, rather depressed, smooth, concentric lines of growth somewhat irregular, orifice rather small, oblong, ash grey, violet towards the base, obscurely rayed.

Hab — ?

This species has no sculpture to characterise it, but the colouring is peculiar.

Species 39. (Mus. Cuming.)

FISSURELLA APERTA. *Fiss. testâ ovatâ, crassâ, depressiusculâ, concentricè creberrimè elevato-striatâ, interstitiis incisis, orificio ovato, peramplo; violaceo-cinerascente, violaceo-nigricante irregulariter radiatâ, basi albi-marginatâ.*

THE OPEN FISSURELLA. Shell ovate, thick, rather depressed, concentrically very closely elevated striated, interstices engraved, orifice ovate, very large; pale violet ash, rayed irregularly with violet-black, edged with white at the base.

SOWERBY, Tankerville Catalogue, App. p. vi. Conch. Illus. f. 10. (sub nom. *F. hiantula*).

Pupillæ aperta, Gray.

Fissurellidea megalrema, D'Orbigny.

Hab. Ensenada de Ros, Coast of Patagonia; D'Orbigny.

Notwithstanding that Lamarck refers to Born's vignette of this species for his *F. hiantula*, it is certainly distinct from that which served for his description. Lamarck's *F. hiantula* is the species which Mr. Sowerby assigns to *F. Javanicensis*, and is well characterised by the remark:—"étant posée sur son ouverture, elle ne s'appuie que sur ses deux côtés."

Mr. Sowerby's original view of this species appears to be the correct one; and his remark that "the depressed white margin is probably caused by the mantle of the animal overlapping the edge of the shell" is confirmed by M. D'Orbigny's figure, Voyage dans l'Amér. Mérid. Moll. pl. 63. showing that the animal is of very large size, with the shell only occupying a small portion of the back, into the flesh of which it is imbedded to the depth of the uncoloured edge.

Species 40. (Mus. Cuming.)

FISSURELLA MEXICANA. *Fiss. testâ oblongo-ovatâ, depressâ, lateribus compressiusculâ, radiatim sulcatâ, lineis intermediis incrementi lineis concentricis decussatis, orificio oblongo, latiusculo, medio subcontracto; purpureo-rufâ, subobscure nigro radiatâ, albâ circa orificium.*

THE MEXICAN FISSURELLA Shell oblong ovate, depressed, a little compressed at the sides, radiately grooved, intermediate ridges decussated with concentric lines of increase, orifice oblong, rather broad, slightly contracted in the middle; purple red, somewhat obscurely rayed with black, white round the orifice.

SOWERBY, Conch. Illus. *Fissurella*, Cat. p. 8. no. 67. f. 61.

Hab. Real Llejos, Mexico; Cuming.

The orifice of this species is characterised externally by a very decided white border.

Species 41. (Mus. Cuming.)

FISSURELLA NIGRITA. *Fiss. testâ ovatâ, depressiusculâ, lateribus compressâ, extremitatibus levatâ, radiatim subtiliter liratâ, concentricè striatâ, orificio ovali, peramplo; intense cinereo-fuscâ, obscure nigro radiatâ.*

THE DINGY FISSURELLA. Shell ovate, rather depressed, compressed at the sides, lifted at the extremities, radiately finely ridged, concentrically striated, orifice oval, very large; dark ash brown, obscurely black-rayed.

SOWERBY, Pro. Zool. Soc., 1834, p. 127.

Hab. — ?

Closely allied to *F. hiantula*, but the orifice is larger and not contracted at the sides.

Species 42. (Mus. Cuming.)

FISSURELLA FULVESCENS. *Fiss. testâ oblongo-ovatâ, acutè subattenuatâ, depressâ, subtilissimè radiatim et concentricè striatâ, orificio oblongo; vividè fuscâ, læco pulcherrimè radiatâ.*

THE FULVOUS FISSURELLA. Shell oblong-ovate, slightly attenuated anteriorly, depressed, very finely radiately and concentrically striated, orifice oblong; bright yellow, beautifully rayed with lake.

SOWERBY, Pro. Zool. Soc., 1834, p. 127.

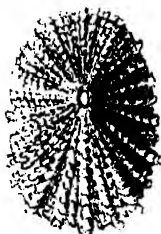
Hab. Valparaiso (under stones on the shore);

From the bright yellow colouring of this have very much the appearance of sun-beams.

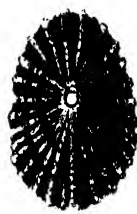
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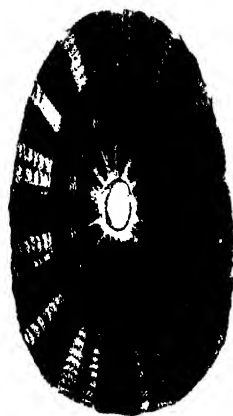
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FISSURELLA.

PLATE VII.

Species 43. (Fig. a and b, Mus. Cuming.)

FISSURELLA MUTABILIS. *Fiss. testā ovalā, anticē subatenuatā, medio elevatā, lateribus subcompressā, radiatim impresso-striatā, striis concentricis decussatā, orificio oblongo-ovato; cinerea aut virescente, interdum roseo-radiatā, radiā unicā albicante plus minus obscurā utrinque notatā.*

THE CHANGEABLE FISSURELLA. Shell ovate, somewhat attenuated anteriorly, elevated in the middle, a little compressed at the sides, radiately impressly striated, crossed with concentric striae, orifice oblong-ovate; ash-colour or greenish, sometimes rayed with pink, and marked on both sides with a more or less obscure whitish ray.

SOWERBY, Pro. Zool. Soc., 1834, p. 126; Conch. Illus. f. 67, 70.

Hab. Cape of Good Hope.

Of rather compressed growth, variously coloured, but mostly characterized by a white ray on either side of the orifice.

Species 44. (Mus. Cuming.)

FISSURELLA MICROTREMA. *Fiss. testā ovalā, anticē subatenuatā, depressiusculā, rugosā, radiatim tenuilinatā, liris nonnullis subprominentibus, orificio minuto; fuscā, maculis perpaucis albidis asperā, liris purpureo-rufis, circa orificium nigricante-viridi, intus virescente.*

THE SMALL SLIT FISSURELLA. Shell ovate, somewhat attenuated anteriorly, rather depressed, rough, radiately thinly ridged, some of the ridges rather prominent, orifice minute; brown, sprinkled with a very few whitish spots, ridges purple-red, dark green around the orifice, interior greenish.

SOWERBY, Pro. Zool. Soc., 1834, p. 125; Conch. Illus. f. 50.

Hab. Real Llejos, Central America (under stones at low water); Cuming.

This species has little character to distinguish it beyond the smallness of the orifice.

Species 45. (Mus. Cuming.)

FISSURELLA JUKESII. *Fiss. testā subquadrato-ovalā, anticē inclinatā, costis lirisque pulcherrimē squamatis radiatā, interstitiis profundis, eximie clathratis, ori-*

ficio parvo, quadrato-ovato, margine basali bidentato; albicante, subpellucidā, intus circa orificium nigricante-viridi.

JUKES' FISSURELLA. Shell somewhat squarely ovate, inclined anteriorly, ribs and ridges very beautifully squamate, radiated, interstices deep, and delicately latticed, orifice small, squarely ovate, basal margin bidentate; whitish, somewhat transparent, very dark green around the orifice in the interior.

Hab. Coast of Australia.

The most beautifully sculptured shell I remember having seen, rayed with numerous ribs and ridges, surmounted with thickly-set vaulted scales, and so deeply carved in the interstices that the ground surface is quite thin and transparent.

Species 46. (Mus. Cuming.)

FISSURELLA OBSCURA. *Fiss. testā ovalā, medio depressiusculā, radiatim costatā et striatā, costis latis, obtusis, distantibus, subcorrugatis, orificio oblongo, lateribus subcontracto; purpureo-rufescente, costis pallide viridibus, circa orificium nigro tinctis, intus virescente.*

THE OBSCURE FISSURELLA. Shell ovate, slightly depressed in the middle, radiately ribbed and striated, ribs broad, obtuse, distant, somewhat corrugated, orifice oblong, a little contracted at the sides; purplish-red, ribs light green, stained with black around the orifice, interior greenish.

SOWERBY, Pro. Zool. Soc., 1834; Conch. Illus. f. 27.

Hab. Gallapagos Islands (under stones at low water); Cuming.

The ribs of this species are rather superficial, being little raised above the surface; they are rather distant from each other and have a swollen straggling appearance.

Species 47. (Mus. Cuming.)

FISSURELLA EDITITIA. *Fiss. testā ovalā, anticē subatenuatā, radiatim costatā, costis fortibus, irregularibus, brevisquamatis, orificio parviusculo, rotundato-ovalā; purpurascens-roseā et albā, intus virescente.*

THE SELECTED FISSURELLA. Shell ovate, somewhat attenuated anteriorly, radiately ribbed, ribs strong, irregular, shortly scaled, orifice rather small, rotundately ovate; purple-rose and white, interior greenish.

Hab. - ?

Rayed with strong rugose ribs, sculptured with irregular blunted scales.

Species 48. (Mus. Cuming.)

FISSURELLA HONDURASENSIS. *Fiss. testā oblongo-ovatā, depressiusculā, anticē vix attenuatā, radiatim superficialiter costatā, costis obtusē squamato-corrugatis, orificio oblongo-ovato; lutescente-albā, rufo pallidē radiatā, circa orificium olivaceā et nigripunctatā.*

THE HONDURAS FISSURELLA. Shell oblong-ovate, rather depressed, but little attenuated anteriorly, radiately superficially ribbed, ribs obtusely squamately wrinkled, orifice oblong-ovate; yellowish-white, rather faintly rayed with red, olive and black dotted around the orifice.

Hab. Honduras; Dyson.

This species is distinguished by the superficial wrinkled character of the spreading ribs, and the dark olive and black dotted marking around the orifice.

Species 49. (Mus. Cuming.)

FISSURELLA PICA. *Fiss. testā oblongo-ovatā, anticē inclinatā, medio levatā, radiatim tenuiliratā, liris striis tenuibus corrugatis concentricis undique eximie decussatis, orificio antico, parvo, rotundato-ovato; cinereo-nigrā, albo marmoratā.*

THE MAGPIE FISSURELLA. Shell oblong-ovate, inclined anteriorly, lifted in the middle, radiately finely ridged, ridges delicately crossed throughout with fine wrinkled concentric striae, orifice anterior, small, rotundately ovate; ash-black, marbled with white.

SOWERBY, *Pro. Zool. Soc.*, 1834, p. 126; *Conch. Illus.* f. 32, 33.

Hab. St. Elena, West Columbia (on dead shells at a depth of from six to eight fathoms); Cuming.

Very delicately sculptured, and marked with dark rusty black and white.

Species 50. (Mus. Cuming.)

FISSURELLA INÆQUALIS. *Fiss. testā oblongo-ovatā, anticē attenuatā et multō inclinatā, medio elevatā, lateribus subcompressis, radiatim tenuiliratā, striis concentricis subtiliter clathratā, orificio parviusculo, oblongo, medio leviter contracto; nigricante, circa orificium cinereo-albicante.*

THE UNEQUAL FISSURELLA. Shell oblong-ovate, attenuated and much inclined anteriorly, raised in the middle, slightly compressed at the sides, radiately thinly ridged, finely latticed with concentric striae, orifice rather small, oblong, a little contracted in the middle; rusty black, ash-white around the orifice.

SOWERBY, *Pro. Zool. Soc.*, 1834, p. 126; *Conch. Illus.* f. 45.

Hab. Gallapagos Islands (under stones at low water); Cuming.

The sculpture of this species approaches that of the preceding in character, except in that the concentric striae have not the same wrinkled appearance.

Species 51. (Mus. Cuming.)

FISSURELLA CANCELLATA. *Fiss. testā ovatā, depressiusculā, radiatim costatā, costis parviusculis, numerosis, striis concentricis, costas super nodosis, undique cancellatā, orificio rotundato-ovato, latiusculo; fuscescente-albā, punctis nigricantibus tessellatim radiatā, orificio cæruleo marginato.*

THE CANCELLED FISSURELLA. Shell ovate, rather depressed, radiately ribbed, ribs rather small, numerous, cancellated throughout with concentric striae, which are nodulous upon the ribs, orifice rotundately ovate, rather broad; brownish white, rayed in a tessellated manner with rusty black, orifice edged with blue.

SOWERBY, *Tankerville Catalogue*, No. 802; *Conch. Illus.* f. 29.

Patella cancellata, Solander.

Foraminella Sowerbii, Guilding.

Lucapina elegans, Gray.

Hab. St. Vincent's, West Indies; Guilding. Honduras; Dyson.

Frequently of a delicate flesh-tinge, and always more or less strongly characterized by the blue colouring of the border of the orifice.



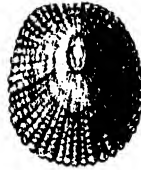
52. a



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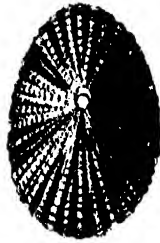
54.



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56.



57.



58.



59. a.



FISSURELLA.

PLATE VIII.

Species 52. (Fig. *a* and *b*, Mus. Cuming.)

FISSURELLA PUSTULA. *Fiss. testā rotundato-ellipticā, plano-depressā, anticē subtruncatā, radiatim obtusē costellatā, costellis striis concentricis elevatiusculis decussatis; orificio subantico, oblongo, angusto, lateribus medio excavatis; pallidē stramineā, circa orificium roseā, interdum roseo radiatā.*

THE PUSTULE FISSURELLA. Shell rotundately elliptic, flatly depressed, slightly truncated anteriorly, radiately obtusely ribbed, ribs decussated with slightly raised concentric striæ; orifice somewhat anterior, oblong, narrow, sides excavated in the middle; pale straw-colour, pink round the orifice, sometimes rayed with pink.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. vii. p. 597.
Patella pustula, Linnæus.

Hab. West Indies; Gosse.

A peculiarly broad depressed species, faintly ribbed and very delicately coloured.

Species 53. (Mus. Cuming.)

FISSURELLA ORTUSA. *Fiss. testā ovalā, medio elevatiusculā, radiatim corrugato-costatis, costis irregularibus, interstitiis subimpressis, aperturā parviusculā, oblongā, lateribus subexcavatis; rosaceo et albo radiatā, radiis albis angustis, conspicuis, radiis rosaceis latioribus, prope basin virescentibus.*

THE ORTUSE FISSURELLA. Shell ovate, rather elevated in the middle, radiately ribbed in a somewhat wrinkled manner, ribs irregular, interstices slightly impressed, aperture rather small, oblong, with the sides excavated; rayed with pink and white, white rays narrow, conspicuous, pink rays broader, fading into light green near the margin.

SOWERBY, *Conch. Illus. Cat. Fiss.* p. 7. f. 59.

Hab. Cape of Good Hope; Humphrey.

The pink colouring which forms the radiating bands of this species, appears only in the grooves of the sculpture, and has the appearance of fine lines.

Species 54. (Mus. Cuming.)

FISSURELLA RUPPELLII. *Fiss. testā ovalā, medio valdē elevatā, anticē inclinatā, radiatim costatā, costis ro-*

tundatis, alternatim majoribus, interstitiis peculiariter et conspicuē clathralis, orificio parvo, antico, quadrato-oblongo; fusciscente-rufā, versus orificium albā, radiis ad octo intensē nigris ornatā.

RUPPELL'S FISSURELLA. Shell ovate, much raised in the middle and inclined anteriorly, radiately ribbed, ribs rounded, alternately larger, interstices peculiarly and conspicuously latticed, orifice small, anterior, squarely oblong; brownish red, white towards the orifice, ornamented with about eight intensely black rays.

SOWERBY, *Pro. Zool. Soc.* 1834, p. 128.

Hab. Red Sea; Ruppell.

A very elaborately sculptured and characteristic species.

Species 55. (Mus. Cuming.)

FISSURELLA ÆQUALIS. *Fiss. testā oblongo-ovalā, tenuiculā, depressā, striis concentricis et radiantibus, obtusis, distantibus, decussatā, orificio ovato, subamplo; cinereo-nigricante, albiradiatā.*

THE EQUAL FISSURELLA. Shell oblong-ovate, rather thin, depressed, decussated with distant obtuse radiating and concentric striæ, orifice ovate, rather large; ashy black, rayed with white.

SOWERBY, *Pro. Zool. Soc.* 1834, p. 127.

Hab. St. Elena, West Columbia (on dead shells at a depth of from six to ten fathoms); Cuming.

Unusually thin and depressed, with a rather large orifice.

Species 56. (Mus. Cuming.)

FISSURELLA RUGOSA. *Fiss. testā suboblongo-ovalā, anticē attenuatā, depressā, costis octo lundis rugosis radiatā, interstitiis rugoso-liratis et striatis, margine basali sinuato et dentato, orificio parviusculo, oblongo-ovato; fuscā et virescente, roseo hic illic punctatā, costis hic illic albicantibus, intus virescente.*

THE ROUGH FISSURELLA. Shell somewhat oblong-ovate, attenuated anteriorly, depressed, rayed with eight rough swollen ribs, interstices roughly ridged and striated, basal margin sinuated and dentated; brown and greenish, here and there pink-dotted, ribs here and there whitish, interior pale green.

SOWERBY, *Conch. Illus. Cat. Fiss.* p. 8. f. 54.

Hab. Gallapagos Islands (under stones at low water); Cuming.

December, 1849.

This shell is of very depressed growth, the sculpture having an exaggerated rough and swollen appearance.

Species 57. (Mus. Belcher.)

FISSURELLA CLATHRATA. *Fiss. testā ovatā, medio gradatim conico-acuminatā, radiatim costatā, costis rotundatis, lirā interveniente, liris concentricis costas super nodosis fortiter clathratis, margine basali dentato, dentibus binis, orificio parvisculo, orbiculari; albidā, virescente-olivaceo obscure radiatā, colore basin versus saturatiore.*

THE LATTICED FISSURELLA. Shell ovate, gradually conically acuminate in the middle, radiately ribbed, ribs rounded, with a ridge running between them, strongly latticed with concentric ridges which are nodulous upon the ribs, basal margin toothed, teeth in pairs, orifice rather small, orbicular, whitish, obscurely rayed with greenish olive, the colour being darker towards the base.

Hab. China Seas.

This elaborately carved species is remarkable for its high conical form, of which the rounded orifice is the summit.

Species 58. (Mus. Cuming.)

FISSURELLA ASPERELLA. *Fiss. testā ovatā, anticē subattenuatā, depressiusculā, radiatim striatā et obsolete costatā, punctis elevatis undique asperatā, orificio oblongo-ovato; olivaceo rubroque variā, anticē albi-radiatā.*

THE ROUGH FISSURELLA. Shell ovate, somewhat attenuated anteriorly, rather depressed, radiately striated and obsolete ribbed, roughened throughout with raised dots, orifice oblong-ovate; variegated with olive and red, rayed anteriorly with white.

SOWERBY, Pro. Zool. Soc. 1834, p. 127. Conch. Illus. f. 71. Hab. Lobos Island, Peru; Cuming.

Distinguished by a finely roughened surface.

Species 59. (Fig. a and b, Mus. Cuming.)

FISSURELLA FASCICULARIS. *Fiss. testā ovatā, superne subattenuatā, depressiusculā, lateribus compressis, radiatim costatā, costis aequalibus, rotundatis, nodulosis, prope marginem obsolete squamatis, orificio oblongo, lateribus medio excavatis; virescente, olivaceo fasciatā, interdum albicante, costis vividē rubris.*

THE FASCICULATED FISSURELLA. Shell ovate, slightly attenuated anteriorly, rather depressed, compressed at the sides, radiately ribbed, ribs equal, rounded, nodulous, obsolete squamate near the margin, orifice oblong, sides excavated in the middle; greenish, banded with olive, sometimes whitish, with the ribs very deep red.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 598. Hab. West Indies.

This species is very closely allied to the *F. pustula*, from the same locality, and they are the only two at present known of that particular type.



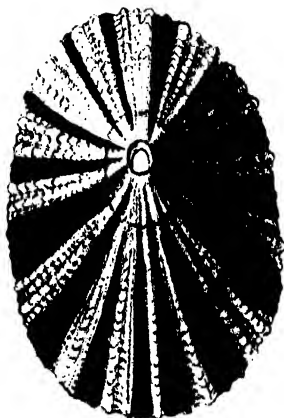
60. a.



60. b.



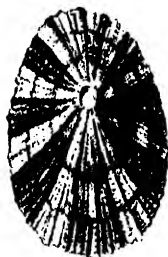
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63.



65



FISSURELLA.

PLATE IX.

Species 60. (Fig. a, b, Mus. Cuming.)

FISSURELLA COMPRESSA. *Fiss. testā oblongo-ovatā, antice attenuatā, elevatiusculā, lateribus subcompressā, radiatim squamato-liratā, liris minoribus subrudibus in interstitiis, orificio ovali, parviusculo; carneo-rufescente aut caruleo-viridi, viz radiatā.*

THE COMPRESSED FISSURELLA. Shell oblong-ovate, attenuated anteriorly, rather elevated, slightly compressed at the sides, radiately squamately ridged, with smaller rather rude ridges in the interstices, orifice oval, rather small; light flesh-red or blue-green, scarcely rayed.

Hab. ———?

The two specimens figured in the accompanying plate are differently coloured, but marked by a peculiarity of form and sculpture, in which they exactly agree.

Species 61. (Mus. Cuming.)

FISSURELLA OLIVACEA. *Fiss. testā ovalā, antice viz attenuatā, subconicā, radiatim subirregulariter rugoso-liratā, liris obsolete nodosis, orificio oblongo-ovato, medio subcontracto; albidā, olivaceo nitide radiatā.*

THE OLIVE FISSURELLA. Shell ovate, scarcely attenuated anteriorly, rather conical, radiately somewhat irregularly roughly ridged, ridges obsolete nodose, orifice oblong-ovate, slightly contracted in the middle; whitish, neatly rayed with olive.

GRAY, Sowerby, Conch. Illus. *Fiss.* Cat. p. 5. f. 57.

Hab.

The olive rays are characteristic and well defined.

Species 62. (Mus. Belcher.)

FISSURELLA LINCOLNI. *Fiss. testā ovalā, medio subconicā, vertice antice leviter inclinato, liris radiantibus compressis angustis, alternatim majoribus, lirisque concentricis eleganter clathratā, orificio subrotundo; albā, cinereo-purpureo irregulariter radiatā.*

LINCOLN'S FISSURELLA. Shell ovate, rather conical in the middle, top slightly inclined anteriorly, elegantly latticed with narrow compressed radiating ridges, which are alternately larger, orifice nearly round; white, rayed irregularly with ash-purple.

GRAY, Sowerby, Conch. Illus. *Fiss.* Cat. p. 7. f. 14.

Hab. Monterey, California.

This interesting species, named by Mr. Gray after the late Mr. Lincoln, from a specimen in that gentleman's cabinet, was collected by Capt. Sir E. Belcher during the voyage of H.M.S. Sulphur.

Species 63. (Mus. Cuming.)

FISSURELLA PUMATA. *Fiss. testā ovalā, antice subattenuatā, elevatiusculā, lateribus subcompressā, radiatim tenuicostatā, costis numerosis, subsquamatis, confertis, margine subacutè denticulatis, vertice antice leviter inclinato, orificio oblongo-ovato, medio contracto; albidā, olivaceo-cinereo radiatā, circa orificium carnescente.*

THE SMOKED FISSURELLA. Shell ovate, slightly attenuated anteriorly, rather elevated, a little compressed at the sides, radiately finely ribbed, ribs numerous, subsquamate, close-set, rather sharply denticulated at the margin, top slightly inclined anteriorly, orifice oblong-ovate, contracted in the middle; whitish, rayed with olive-ash, bluish around the orifice.

Hab. ———?

The bluish colouring around the orifice of this species is characteristic.

Species 64. (Mus. Cuming.)

FISSURELLA DENSICLATHRATA. *Fiss. testā ovalā, medio elevatā et antice inclinatā, liris concentricis et radiantibus undique dense clathratā, orificio subrotundo; albidā aut flavicante, olivaceo radiatā.*

THE THICKLY-LATTICED FISSURELLA. Shell ovate, elevated and inclined anteriorly in the middle, thickly latticed throughout with radiating and concentric ridges, orifice nearly round; whitish or yellowish, rayed with olive.

Hab. ———?

A very closely latticed species, raised and inclined anteriorly in the middle.

Species 65. (Mus. Cuming.)

FISSURELLA FUNICULATA. *Fiss. testā ovalā, antice attenuatā, elevato-conicā, ice antice inclinatā, lineis*

FISSURELLA.—PLATE IX.

obtusis concentricis et radiantibus undique creberrimè gemmato-cancellatâ, orificio subrotundo; albidâ, ferrugineo-olivaceo pallidè radiatâ, funiculis fusco-olivaceo articulatis hic illic radiatâ.

THE CORDED FISSURELLA. Shell ovate, attenuated anteriorly, elevately conical, inclined anteriorly at the top, very closely gemmately cancellated throughout with obtuse radiating and concentric lines, orifice

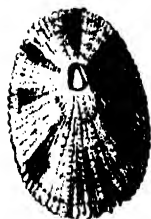
nearly round; whitish, rayed with faint olive-rust, and here and there with cords articulated with olive-brown.

Hab. Kurrachee, Mouth of the Indus.

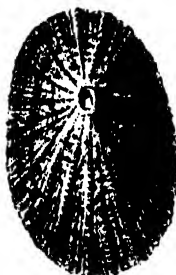
The sculpture of this species is finely carved, and the colouring is remarkable for the dark articulated cords which radiate from the orifice.



66.



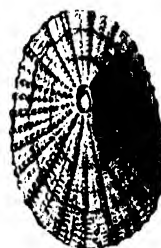
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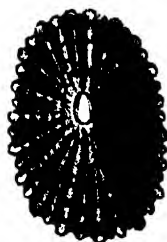
69. a



70.



69. b.



71.

FISSURELLA

PLATE X.

Species 66. (Mus. Cuming.)

FISSURELLA BALANOIDES. *Fiss. testā ovalā, anticē subattenuatā, subconicā, lævigatā, radiatim leviter sulcatā, orificio oblongo-ovalō, mediō subcontracto; flavicante, roseo interdum tinctā, olivaceo et intensè viridi radiatā, radiis lineis saturationibus notatis, virescente-albā circa orificium.*

THE BALANUS-LIKE FISSURELLA. Shell ovate, a little attenuated anteriorly, rather conical, smooth, radiately slightly grooved, orifice oblong-ovate, a little contracted in the middle; yellowish, sometimes faintly tinged with rose, rayed with olive and dark green, rays marked with lines of the colour darker, greenish-white around the orifice.

Hab. — ?

The painting of this species somewhat resembles that of *F. nimboza*.

Species 67. (Mus. Cuming.)

FISSURELLA INDUSICA. *Fiss. testā ovalā, elevatiusculā, subconicā, vertice anticē inclinātō, liris radiatibus irregularibus et concentricis undique subobtusè clathratā, orificio oblongo, mediō leviter contracto; virescente-albā, olivaceo-viridi radiatā.*

THE INDUS FISSURELLA. Shell ovate, rather elevated, subconical, with the top inclined anteriorly, rather obtusely latticed throughout with concentric and irregular radiating ridges, orifice oblong, slightly contracted in the middle; greenish-white, rayed with olive-green.

Hab. Kurrachee, Mouth of the Indus.

Very similar to the following well-known species of our own shores in form, sculpture, and colouring.

Species 68. (Mus. Metcalfe.)

FISSURELLA RETICULATA. *Fiss. testā ovalā, subconicā, mediō levatiusculā, vertice anticē inclinātō, radiatim liratā, liris angustis, alternatim majoribus, lineis concentricis lamelliformibus, plus minus distantibus, squamato-reticulatis, orificio ovali, ætate rotundato; virescente aut squalidè albā, olivaceo-viridi hic illic obscurè radiatā.*

THE RETICULATED FISSURELLA. Shell ovate, subconical, slightly lifted in the middle, top inclined anteriorly, radiately ridged, ridges narrow, alternately larger, reticulated with more or less distant concentric lamelliform lines, orifice oval, rounded with age: greenish or dirty white, obscurely rayed here and there with olive-green.

Patella Græca, Pennant, Brit. Zool. ed. 4, vol. iv. p. 144, pl. 89, f. 153.

Patella reticulata, Donovan.

Fissurella reticulata, Recluz.

Fissurella cancellata, Gray.

Fissurella Europæa, Sowerby.

Eadem. *Fissurella apertura*, Montagu.

Sipho radiata, Brown.

Hab. Britain and the Mediterranean.

So many species have been confounded together under the common appellation of *Fissurella Græca*, that it is necessary the name should disappear from the nomenclature. D'Orbigny enumerates three species, from Peru, Patagonia, and the West Indies, the last-named being the *F. Græca* of Lamarek, and the preceding species shows how distinctly this type is represented in the East.

Species 69. (Fig. a, Mus. Metcalfe. Fig. b, Mus. Cuming.)

FISSURELLA INCII. *Fiss. testā oblongo-ovalā, tenuiculā, mediō subconicā, anticē inclinātā, radiatim costatā, costis alternatim majoribus, lineis concentricis lamelliformibus undique nitidè tenuiclatratis, orificio rotundato-ovalī; albā, costis majoribus spadiceis, interstitiis interdum nigripunctatis.*

INCE'S FISSURELLA. Shell oblong-ovate, rather thin, somewhat conical in the middle, and inclined anteriorly, radiately ribbed, ribs alternately larger, neatly and finely latticed throughout with concentric lamelliform lines, orifice rotundately oval; white, the larger ribs fawn-coloured, interstices between the ribs sometimes black-dotted.

Hab. Raine's Island, North Australia; Ince.

The fawn-coloured ribs, which radiate from the orifice at about equal distances, are very characteristic in this species.

Species 70. (Mus. Cuming.)

FISSURELLA HONDURASSENSIS. *Fiss. testā oblongo-ovali, subdepresso-convexā, radiatim costatā, costis numerosis, conferlis, æqualibus, lineis concentricis subobtusis nodoso-cancellatis, orificio ovali, amplo, anticè inclinato, lateribus leviter contracto; rosaceo-albicante, versus marginem cinereo-fuscescente tinclā, pone orificium subcæruleā.*

THE HONDURAS FISSURELLA. Shell oblong-oval, rather depressly convex, radiately ribbed, ribs numerous, close-set, equal, nodosely cancellated with rather obtuse concentric lines, orifice oval, large, inclined anteriorly, slightly contracted at the sides; pinkish-white, light ash-brown towards the margin, bluish behind the orifice.

Hab. Honduras; Dyson.

Of a delicate flesh-pink white, with the ribs equal, not varying alternately, and finely nodose, where crossed by the concentric lines.

In *F. Listeri*, and other species, distinguished by blue colouring around the orifice, the colour mostly prevails in front, in this it is situated posteriorly.

Species 71. (Mus. Cuming.)

FISSURELLA LISTERI. *Fiss. testā subquadrato-ovalā, depressiusculā, costis concentricis et radiantibus fortiter nodoso-clathratā, interstitiis profundè excavatis, orificio oblongo, subamplo, anticè inclinato; virescente-albā, intensè viridi plus minusve tinclā et variegatā, circa orificium cærulescente.*

LISTER'S FISSURELLA. Shell somewhat squarely ovate, rather depressed, strongly nodosely latticed with concentric and radiating ribs, the interspaces being deeply excavated, orifice oblong, rather large, inclined anteriorly; greenish-white, more or less stained and variegated with dark green, bluish around the orifice.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 476.

Fissurella Græca, Lamarck.

Hab. West Indies.

Named anew by D'Orbigny, for the reasons given under the head of *F. reticulata*, from which it differs principally in having the sculpture so much more strongly latticed, and nodose, rather than squamate, at the point of crossing.



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FISSURELLA.

PLATE XI.

Species 72. (Mus. Cuming.)

FISSURELLA ÆGIS. *Fiss. testā oblongā, depressā, parum elevatā, liris radiatibus subæqualibus numerosis confertis, lineisque concentricis nitidè squamato-cancellatā, orificio oblongo, subamplo, anticè inclinato; albā, virescente-olivaceo subobscurè latiradiatā.*

THE ÆGIS FISSURELLA. Shell oblong, depressed, but little raised, neatly squamately cancellated with numerous close-set nearly equal ridges and concentric lines, orifice oblong, rather large, inclined anteriorly; white, rather obscurely broadly rayed with greenish-olive.

Hab. ———?

A beautifully-sculptured species, having very much the form of a *Parmophorus*.

Species 73. (Mus. Cuming.)

FISSURELLA ATRATA. *Fiss. testā ovatā, anticè attenuatā, depresso-planā, medio elevatiusculā, obsolete liriradiatā, liris marginem versus obscurè nodulosi, orificio oblongo, lateribus subcontractis; intensè purpureo-atrā, circa orificium albā, atro radiatā, margine interno latè purpureo-atro.*

THE INKY FISSURELLA. Shell ovate, attenuated anteriorly, depressly flattened, slightly raised in the middle, obsolete rayed with ridges, which are obscurely nodulous towards the margin, orifice oblong, slightly contracted at the sides; deep purple-black, white, rayed with black around the orifice, internal margin broadly purple-black.

Hab. ———?

Belonging to the Peruvian type with broad inner margin, *F. latimarginata*, *Bridgesii*, &c., but specifically distinct.

Species 74. (Mus. Cuming.)

FISSURELLA EXQUISITA. *Fiss. testā ovali, anticè vix attenuatā, tenui, depressiusculā, medio elevatā, radiatim crebriliratā, liris subirregularibus, corrugatis, obscurè nodulosi, orificio peramplo, lateribus contracto; flavescens-albā, purpureo-nigricante conspicuè et regulariter radiatā, margine interno tessellato.*

THE EXQUISITE FISSURELLA. Shell ovate, scarcely attenuated anteriorly, thin, rather depressed, raised in the middle, radiately closely ridged, ridges somewhat irregular, corrugate, obscurely nodulous, orifice very large, contracted at the sides; yellowish-white, conspicuously regularly rayed with purple-black, internal margin tessellated.

Hab. Strait of Magalhæns.

A very characteristic species, in which the orifice of true key-hole form is unusually large.

Species 75. (Mus. Metcalfe.)

FISSURELLA METCALFII. *Fiss. testā oblongo-ovatā, depressiusculā, medio levatā, radiatim liratā, liris numerosis confertis, subangulatis, striis concentricis undique creberrimè decussatis, orificio oblongo-ovato, medio subexcavato, anticè inclinato, margine denticulato, denticulis hic illic bifidis; virescente-albā, olivaceo interruptè latiradiatā.*

METCALFE'S FISSURELLA. Shell oblong-ovate, rather depressed, raised in the middle, radiately ridged, ridges numerous, close-set, slightly angled, very closely decussated throughout with concentric striae, orifice oblong-ovate, slightly excavated in the middle, inclined anteriorly, margin denticulated, denticles here and there bifid; greenish-white, interruptedly broadly rayed with olive.

Hab. ———?

The ridges, which are very numerous and close-set, are slightly angular, and very closely festooned throughout with concentric striae.

Species 76. (Mus. Cuming.)

FISSURELLA CLYPEUS. *Fiss. testā ovali, crassiusculā, depressā, obscurè radiatim liratā, liris distantibus, obsolete muricato-nodosi, orificio oblongo-ovato, parvisculo; albidā, ustulato-nigro peculiariter reticulato-radiatā, margine interno tessellato.*

THE SHIELD FISSURELLA. Shell ovate, rather thick, depressed, obscurely radiately ridged, ridges distant, obsolete prickly nodose, orifice oblong-ovate, rather small; whitish, peculiarly rayed in a reticulated manner with burnt-black, internal margin tessellated.

SOWERBY, Pro. Zool. Soc. 1834, p. 128.

Hab. St. Elena, West Columbia; Cuming.

Mr. Cuming only collected a single specimen of this very characteristic species, and it still remains unique in his cabinet.

Species 77. (Mus. Cuming.)

FISSURELLA GALERICULUM. *Fiss. testâ ovatâ, anticè valdè attenuatâ, crassiusculâ, lateribus compressâ, radiatim multistriatâ, orificio oblongo, subamplo, lateribus medio leviter excavatis; intensè rufo-purpureâ, utrinque orificium albiradiatâ, margine interno latiusculo, rufo-purpureo.*

THE BONNET FISSURELLA. Shell ovate, very much attenuated anteriorly, rather thick, compressed at the sides, radiately many-striated, orifice oblong, rather large, sides slightly excavated in the middle; deep red-purple, white-rayed on each side of the orifice, internal margin rather broad, red-purple.

Hab. — ?

Distinguished by its attenuately compressed form, and deep crimson-purple colouring.

Species 78. (Mus. Cuming.)

FISSURELLA SALEBROSA. *Fiss. testâ suborbiculari-ovatâ, depressâ, radiatim rudè costatâ, costis subæqualibus, laminis concentricis undique conspicuè fimbriato-squamatis, orificio rotundato; albidâ, fusco hic illic tinctâ et lineari-notatâ.*

THE RUGGED FISSURELLA. Shell somewhat orbicularly ovate, depressed, radiately rudely ribbed, ribs nearly equal, conspicuously fimbriately squamate throughout with concentric laminae, orifice rounded; whitish, stained and linearly marked here and there with brown.

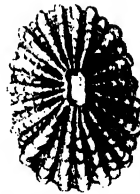
Hab. Kurrachee, Mouth of the Indus.

The ribs of this species are surmounted throughout with rough erect furbelowed scales.



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FISSURELLA.

PLATE XII.

Species 79. (Mus. Cuming.)

FISSURELLA ROTA. *Fiss. testâ ovalâ, depressiusculâ, radiatim obscure obtusè lirate, liris sulcis concentricis decussatis, orificio elongato-oblongo, lateribus subcontracto; olivaceo-fuscâ, conspicuè albiradiatâ, radiis prope marginem fusco-punctatis, circa orificium rosaceâ.*

THE WHEEL FISSURELLA. Shell ovate, rather depressed, radiately obscurely obtusely ridged, ridges decussated with concentric grooves, orifice elongately oblong, a little contracted at the sides; olive-brown, conspicuously white-rayed, rays blotched near the margin with brown, pink round the orifice.

Hab. Cape of Good Hope.

The white rays have a raised appearance in this species and are very characteristic.

Species 80. (Mus. Cuming.)

FISSURELLA STELLATA. *Fiss. testâ ovalâ, depressâ, medio elevatiusculâ, obscure lirate, liris obsolete nodulosis, orificio oblongo, subangusto, lateribus medio excavatis; albidâ, rufescente radiatâ, radiis nigricante-purpureo maculatis, margine interno latè tessellato.*

THE STARRED FISSURELLA. Shell ovate, depressed, rather elevated in the middle, obscurely rayed with ridges, which are obsolete nodulous, orifice oblong, rather narrow, sides excavated in the middle; whitish, rayed with light red, the rays being blotched with blackish purple, internal margin broadly tessellated.

Hab. Valparaiso (attached to dead shells at a depth of from six to twelve fathoms); Cuming.

A very prettily rayed species, distinguished internally by the broad tessellated painting of the margin.

Fig. 81. (Mus. Cuming.)

The shell here represented proves to be a smooth variety of *F. rota* described above, and is from the same locality. For Sp. 81 see Pl. XV.

Species 82. (Mus. Cuming.)

FISSURELLA CAYENNENSIS. *Fiss. testâ ovalâ, convexo-conicâ, lateribus subcompressâ, radiatim multilirate,*

liris tenuibus, striis concentricis numerosis decussatis, margine subtiliter crenulato, orificio oblongo, lateribus medio excavatis, anticè inclinato; albidâ, fusco caric-gatâ, circa orificium cærulescente.

THE CAYENNE FISSURELLA. Shell ovate, convexly conical, rather compressed at the sides, radiately many-ridged, ridges fine, decussated with numerous concentric striae, finely crenulated at the margin, orifice oblong, sides excavated in the middle, inclined anteriorly; whitish, variegated with brown, bluish around the orifice.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. vii. p. 594.

Hab. Cayenne, Guiana.

The close-set radiating ridges, which form at their extremity the finely crenulated margin, are about eighty in number.

Species 83. (Mus. Cuming.)

FISSURELLA CRENIFERA. *Fiss. testâ oblongo-ovalâ, depressâ, radiatim costatâ et striatâ, costis muricato-nodosis, striis concentricis obsolete squamato-decussatis, margine vix crenulato, orificio elongato-oblongo, lateribus medio excavatis; albo et fusco-rufo latè radiatâ.*

THE CRENULATED FISSURELLA. Shell oblong-ovate, depressed, radiately ribbed and striated, ribs muricately nodose, obsolete squamately decussated with concentric striae, margin scarcely crenulated, orifice elongately oblong, sides excavated in the middle; broadly rayed with white and brown-red.

SOWERBY, *Pro. Zool. Soc.* 1834, p. 128.

Hab. Real Llejo, Central America.

This species is not sufficiently crenulated to be entitled to the specific name which has been applied to it.

Species 84. (Mus. Cuming.)

FISSURELLA ALTERNATA. *Fiss. testâ oblongo-ovalâ, subquadratâ, elevatâ, lateribus subcompressâ, radiatim costatâ, costis angustis, liris tribus parvisculis in interstitiis, laminis numerosis fimbriatis concentricis undique squamato-decussatâ, orificio subquadrato-oblongo, anticè inclinato, lateribus medio excavatis; albidâ, cinereo-olivaceo pallidè maculatâ et radiatâ, ante orificium cærulescente.*

THE ALTERNATE FISSURELLA. Shell oblong-ovate, subquadrate, raised, a little compressed at the sides, radiately ribbed, ribs narrow, with three rather small ridges in the interstices, squamately decussated throughout with numerous concentric furbelowed laminae, orifice subquadrately oblong, inclined anteriorly, sides excavated in the middle; whitish, faintly spotted and rayed with ash-olive, bluish in front of the orifice.

SAY, Gould, MS.

Hab. ——— ?

The ribs of this species are rendered prickly by the delicate squamate growth of the concentric furbelowed laminae.

Species 85. (Mus. Cuming.)

FISSURELLA HUMPHREYI. *Fiss. testā ovatā, crassiusculā, valdē conicā, Balaniformi, radiatim fortiter costatā, costis nodosis et corrugatis, circa orificium alternatim evanidis, orificio oblongo-ovato, subamplo, medio contracto; albā.*

HUMPHREY'S FISSURELLA. Shell ovate, rather thick, very conical, Balanus-shaped, radiately strongly ribbed, ribs nodose and corrugate, fading alternately around the orifice, which is oblong-ovate, rather large, and contracted in the middle; white.

Hab. Cape de Verd Islands.

Belonging to the same type as *F. glaucopsis* and *alabastrites* from the same locality, but remarkably distinguished specifically by its elevated conical form. I dedicate this species to the memory of the late Mr. Humphrey, in remembrance of an admirable figure of it drawn and published by him in his 'Conchology, or Natural History of Shells,' pl. 7. f. 7.

Species 86. (Mus. Cuming.)

FISSURELLA DYSONI. *Fiss. testā ovali, acuminato-conicā, lateribus compressā, radiatim squamato-costatā, costis elevatis, interstitiis nitidē cancellatis, orificio subquadrato-oblongo, lateribus medio subexcavatis; carulecente-albā, intense nigro radiatā.*

DYSON'S FISSURELLA. Shell ovate, acuminately conical, compressed at the sides, radiately squamately ribbed, ribs elevated, interstices neatly cancellated, orifice

somewhat squarely oblong, slightly excavated at the sides; bluish-white, rayed with deep black.

Hab. Honduras; Dyson.

A beautifully sculptured species, allied in form to *F. Rappellii*.

Species 87. (Mus. Cuming.)

FISSURELLA PANAMENSIS. *Fiss. testā rotundato-ovali, lateribus subcompressā, radiatim tenuicostatā, interstitiis subtilissimē cancellatis, orificio parvo, rotundato; albā, fusco maculatā et fulguratā.*

THE PANAMA FISSURELLA. Shell rotundately oval, a little compressed at the sides, radiately thinly ribbed, the interstices being very finely cancellated, orifice small, rounded; white, blotched and lightning-marked with brown.

SOWERBY, Pro. Zool. Soc. 1834, p. 127.

Hab. Panama (on dead shells at a depth of from six to ten fathoms); Cuming.

Of a more rounded form than the preceding species, with a smaller and rounder orifice.

Species 88. (Mus. Cuming.)

FISSURELLA CALYCOLATA. *Fiss. testā ovatā, anticē subattenuatā, medio acuminato-conicā, tenuissimā, pellucidā, lateribus compressā, radiatim costatā, costis fimbriato-squamatis, tribus posticis multo majoribus, costarum interstitiis pulcherrimē fimbriato-clathratis, orificio parvo, rotundato-ovato, intus posticē calyculato; pellucido-albā, roseo tinctā.*

THE CHAMBERED FISSURELLA. Shell ovate, slightly attenuated anteriorly, acuminately conical in the middle, very thin, pellucid, compressed at the sides, radiately ribbed, ribs fimbriately squamate, the three posterior ribs much the larger, interstices between the ribs very beautifully fimbriately latticed, orifice small, rotundately ovate, posteriorly chambered within; transparent white, tinged with rose.

SOWERBY, Genera of Shells, No. 21. f. 4.

Hab. ——— ?

It may be doubted whether the inner chamber posterior to the orifice is a character of the species. The larger size and squamate growth of the three posterior ribs may be regarded of more importance.



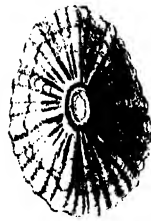
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97



FISSURELLA.

PLATE XIII.

Species 89. (Mus. Cuming.)

FISSURELLA CANDIDA. *Fiss. testā subelongato-ovalā, concavo-elevatā, lateribus subcompressā, crassiusculā, liris parvis concentricis et radiantibus undique decussatā, orificio parvo, anticē valdē inclinātō, lateribus medio excavatis; albā, immaculatā.*

THE WHITE FISSURELLA. Shell somewhat elongately ovate, concavely raised, somewhat compressed at the sides, rather thick, decussated throughout with small radiating and concentric ridges, orifice small, very much inclined anteriorly, sides excavated in the middle; white, unspotted.

SOWERBY, Conch. Illus. *Fiss.* Cat. p. 7. f. 58.

Hab. —?

The truncated growth of the posterior basal edge, described by Mr. Sowerby, appears to be accidental.

Species 90. (Mus. Cuming.)

FISSURELLA EXQUISITA. *Fiss. testā ovalā, medio elevato-conicā, rix anticē inclinātā, liris radiantibus et concentricis undique eximie profundē clathratā, liris radiantibus alternis minoribus, prope orificium evanidis, orificio orbiculari-ovato, parviusculo; pellucido-albā.*

THE EXQUISITE FISSURELLA. Shell ovate, elevately conical in the middle, scarcely inclined anteriorly, delicately and deeply latticed throughout with radiating and concentric ridges, of which the alternate are smaller and disappear near the orifice, orifice orbicularly ovate, rather small; transparent white.

Hab. —?

The latticed sculpture of this species is extremely delicate and well-defined.

Species 91. (Mus. Cuming.)

FISSURELLA CATILLUS. *Fiss. testā oblongo-ovalā, crassiusculā, lateribus subcompressā, obscure decussatim liratā, liris subrudibus, ferē evanidis, orificio ovato, subamplo; rosaceā, albido-radiatā.*

THE LITTLE DISH FISSURELLA. Shell oblong-ovate, rather thick, a little compressed at the sides, obscurely decussately ridged, ridges somewhat rude, almost faded, orifice ovate, rather large; pinkish, rayed with dull white.

Hab. Java.

This specimen is uncoloured round towards the base which is not likely to be a character of the species.

Species 92. (Mus. Cuming.)

FISSURELLA DIGITALE. *Fiss. testā orbiculari-ovalā, gibboso-conicā, anticē valdē inclinātā, striis elevatis radiantibus et concentricis undique creberrimē decussatā, orificio parvo, suborbiculari; intense cinereā, prope basin fuscā, circa orificium caerulecente.*

THE THIMBLE FISSURELLA. Shell orbicularly ovate, gibbously conical, very much inclined anteriorly, very closely decussated throughout with raised concentric and radiating striae, orifice small, nearly orbicular; deep ash-colour, brown near the base, bluish around the orifice.

Hab. —?

An extremely characteristic species, having very much the appearance of a small *Patella*.

Species 93. (Mus. Cuming.)

FISSURELLA DACTYLOSA. *Fiss. testā ovalā, subconicā, liris radiantibus et concentricis acutē densē clathratā, liris radiantibus alternatim majoribus et prominentibus, orificio ovato, parvo; albidā, ferrugineo-fusco pallide latiradiatā.*

THE FINGERED FISSURELLA. Shell ovate, rather conical, sharply thickly latticed with radiating and concentric ridges, which are alternately larger and prominent, orifice ovate, rather small; whitish, faintly broadly rayed with rust-brown.

Hab. Kurrachee, Mouth of the Indus.

In this species every other alternate ridge is larger and more prominent than the rest.

Species 94. (Mus. Cuming.)

FISSURELLA AUSTRALIS. *Fiss. testā ovalā, medio caldē elevatā, anticē concaviusculā, costis costellisque compressis, acutis, radiantibus, liris concentricis undique profundē nodoso-clathratā, orificio parvo, ovato; albidā, pallidē ferrugineo subobscurē maculato-radiatā.*

THE SOUTHERN FISSURELLA. Shell ovate, much raised in the middle, rather concave anteriorly, deeply nodosely

lattice throughout with radiating sharp compressed ribs and riblets, and concentric ridges, orifice small, ovate; whitish, somewhat obscurely blotch-rayed with light rust-brown.

KRAUSS, Sudafric. Moll. p. 67. pl. 4. f. 10.

Hab. Natal, South Africa.

A characteristic species of the same type as our British *F. reticulata*.

Species 95. (Mus. Cuming.)

FISSURELLA CONIODES. *Fiss. testā ovali, elevato-conicā, crassā, radiatim corrugato-costatā, costis valdē irregularibus et rugosis, orificio ovato, centrali; albā, circa orificium cinereo-nigricantē, intus virescente.*

THE CONIA-LIKE FISSURELLA. Shell ovate, elevately conical, thick, radiately corrugately ribbed, ribs very irregular and rugose, orifice ovate, central; white, ashy black around the orifice, greenish in the interior.

Hab. Cape of Good Hope.

Closely allied to the *F. glaucopsis* and *alabastrites* from the Cape de Verd Islands.

Species 96. (Mus. Cuming.)

FISSURELLA CRUCIATA. *Fiss. testā oblongo-ovalā, anticē inclinatā, lateribus subcompressā, liris radiantibus striisque concentricis elevatis nitidē clathratā, liris alternis minoribus, prope orificium evanidis, orificio orbiculari-ovato; albā, radiis quatuor ferrugineis interruptis basin versus notatā.*

THE CROSS-MARKED FISSURELLA. Shell oblong-ovate, inclined anteriorly, rather compressed at the sides, neatly latticed with radiating ridges and raised concentric striae, alternate ridges smaller and fading near the orifice, orifice orbicularly ovate; white, marked towards the base with four interrupted rust-brown rays.

KRAUSS, Sudafric. Moll. p. 67. pl. 4. f. 9.

Hab. Natal, South Africa.

The cross-marked painting, which is more defined in the specimen represented by Dr. Krauss, must not be regarded as a specific character.

Species 97. (Mus. Cuming.)

FISSURELLA LENTIGINOSA. *Fiss. testā oblongo-ovalā, gibboso-concavā, depressiusculā, liris radiantibus striisque concentricis elevatis undique densē clathratā, orificio antico, orbiculari-ovato, subumplo; albā, fusco hic illic eximie lentiginosā, maculis grandibus nigricante-fusca prope ad basin.*

THE FRECKLED FISSURELLA. Shell oblong-ovate, gibbously concave, rather depressed, thickly latticed throughout with radiating ridges and concentric raised lines, orifice anterior, orbicularly ovate, rather large; white, delicately freckled here and there with brown, with large blackish-brown blotches next the base.

Hab. — ?

The freckled style of painting appears to be a somewhat characteristic feature in this species.

Species 98. (Mus. Cuming.)

FISSURELLA LARVA. *Fiss. testā ovalā, elevato-conicā, costis distantibus lirisque intermediis striis concentricis nitidē clathratā, orificio anticē inclinato, ad extremitatem anticam peculiariter contracto; nigricante-olivaceā, circa orificium hic illic albo notatā.*

THE MASK FISSURELLA. Shell ovate, elevately conical, neatly latticed with distant ribs with intermediate ridges and concentric striae, orifice inclined anteriorly and peculiarly contracted at the anterior extremity; blackish-olive, marked here and there about the orifice with white.

Hab. Island of St. John's, West Indies; Hartvig.

A strongly sculptured shell with a very peculiar orifice, which is unusually contracted at the anterior end.



FISSURELLA.

PLATE XIV.

Species 99. (Mus. Cuming.)

FISSURELLA PILEOPSOIDES. *Fiss. testā ovalā, valdē elevatā, anticē conspicuē falcatā, radiatim densilimatā, orificio oblongo-ovato, parviusculo; albā.*

THE PILEOPSIS-LIKE FISSURELLA. Shell ovate, very much raised, anteriorly conspicuously hooked, radiately thickly ridged, orifice oblong-ovate, rather small; white.

Hab. Island of Masbate, Philippines (on the reefs at low water); Cuming.

Remarkable for the top of the shell being very much produced anteriorly, after the manner of a *Pileopsis*.

Species 100. (Fig. 100, 101, Mus. Cuming.)

FISSURELLA SINGAPORENSIS. *Fiss. testā ovalā, subconicā, costellis numerosis radiatibus striis concentricis elevatiusculis densilimatā, orificio parvo, suborbiculari; albidā, cinereo-nigricante subobscurē radiatā et variegatā.*

THE SINGAPORE FISSURELLA. Shell ovate, subconical, thickly latticed with numerous radiating fine ribs and raised concentric striae, orifice small, nearly orbicular; whitish, somewhat obscurely rayed and variegated with light ash-black.

Hab. Singapore; Cuming.

The latticed sculpture of this species becomes frequently amalgamated and obscure towards the base.

Species 102. (Mus. Cuming.)

FISSURELLA SIEBOLDII. *Fiss. testā ovalā, medio elevatā, anticē curvatā, radiatim costatā, costis subcompressis, distantibus, posticis majoribus, elevatis, concentricē rugoso-squamatis, orificio parvo, ovato, antico; albidā, cinereo variegatā.*

SIEBOLD'S FISSURELLA. Shell ovate, raised in the middle, curved anteriorly, radiately ribbed, ribs rather compressed, distant, the posterior larger, elevated, concentrically roughly squamate, orifice small, ovate, anterior; whitish, variegated with ash.

Hab. Japan; Dr. Siebold.

Belonging to a very characteristic group, including *F. calyculata* and others, in which the radiating ribs are

widely separated, more or less squamate, and always larger at the posterior end of the shell.

Species 103. (Mus. Cuming.)

FISSURELLA MURICATA. *Fiss. testā ovalā, medio conicā, lateribus depressiusculā, radiatim subobscurē tenuilimatā et striatā, liris muricato-nodosis, orificio oblongo, lateribus medio excavatis; nigricante-purpureā, albidā circa orificium.*

THE PRICKLY FISSURELLA. Shell ovate, conical in the middle, rather depressed at the sides, radiately somewhat obscurely ridged and striated, ridges prickly-nodose, orifice oblong, sides excavated in the middle; blackish-purple, whitish round the orifice.

Hab. — ?

Distinguished chiefly by the prickly-nodose character of the ridges.

Species 104. (Mus. Cuming.)

FISSURELLA FIMBRIATA. *Fiss. testā ovalā, medio elevatā, conicā, radiatim costatā, costis angustis, compressis, laminis concentricis pulcherrimē squamato-fimbriatā, orificio ovato, centrali; griseo-albā, nigricante-cinereo hic illic variegatā.*

THE FURBELOWED FISSURELLA. Shell ovate, elevated conical in the middle, radiately ribbed, ribs narrow, compressed, very beautifully squamately furbelowed with concentric laminae, orifice ovate, central; greyish-white, variegated here and there with blackish-ash.

Hab. Port Moller, North-east Coast of Australia (under stones at low water); Jukes.

In this most elaborately furbelowed species the orifice has a very central aspect and is peculiarly elevated.

Species 105. (Mus. Cuming.)

FISSURELLA VIMINEA. *Fiss. testā oblongo-ovalā, depressoplanā, medio elevatiusculā, obtusā, radiatim costatā, costis parvis, confertis, irregularibus, liris concentricis undique creberrimē decussatis, orificio oblongo, parviusculo; cinereo-olivaceā, obscurē radiatā, pellucido-albā circa orificium.*

THE WICKER FISSURELLA. Shell oblong-ovate, depressly flattened, rather elevated in the middle, obtuse, radiately ribbed, ribs small, close-set, irregular, very closely decussated throughout with concentric ridges, orifice oblong, rather small; ash-olive, obscurely rayed, transparent around the orifice.

Hab. —?

The sculpture of this species is very peculiar, having the appearance of wicker-work.

Species 106. (Mus. Cuming.)

FISSURELLA OSTRINA. *Fiss. testā ovatā, subconicā, lateribus subcompressā, radatim liratā, liris subrugosis, irregularibus, obscurē nodulosis, orificio oblongo, angusto, lateribus medio excavatis; nigro-purpureā, orificium versus rosaceā, intus virescente.*

THE PURPLE FISSURELLA. Shell ovate, slightly conical, rather compressed at the sides, radiately ridged, ridges subrugose, irregular, obscurely nodulous, orifice oblong, narrow, sides excavated in the middle; very dark purple, pinkish towards the orifice, greenish within.

Hab. —?

Simple in character, though irreferable to any hitherto described species.

Species 107. (Mus. Cuming.)

FISSURELLA TICAONICA. *Fiss. testā ovatā, gibboso-elevatā, anticē valdē inclinatā, subfalcatā, liris radiantibus fortibus angustis, striis concentricis elevatis undique densiclatratā, orificio elongato-oblongo, lateribus me-*

dio excavatis; virescente-albā, olivaceo-viridi sparim maculatā et punctatā, cærulescente circa orificium.

THE TICAON FISSURELLA. Shell ovate, gibbously elevated, anteriorly much inclined, slightly hooked, thickly latticed throughout with strong narrow radiating ridges and raised concentric striæ, orifice elongately oblong, sides excavated in the middle; greenish-white, sprinkled with dots and blotches of olive-green, bluish round the orifice.

Hab. Island of Ticao, Philippines (under stones at low water); Cuming.

An extremely characteristic species, much elevated and curved anteriorly, with the same narrow oblong orifice mostly seen in the flat species.

Species 108. (Mus. Cuming.)

FISSURELLA QUADRIRADIATA. *Fiss. testā ovatā, gibboso-elevatā, anticē subinclinatā, liris fortibus radiantibus, alternatim majoribus, striisque elevatis concentricis densissimē clathratā, orificio subelongato-oblongo, lateribus medio excavatis; albā, nigro maculatā et conspicuē quadriradiatā.*

THE FOUR-RAYED FISSURELLA. Shell ovate, gibbously elevated, a little inclined anteriorly, very thickly latticed with strong radiating ribs, which are alternately larger, and concentric raised striæ, orifice rather elongately oblong, with the sides excavated in the middle; white, blotched and conspicuously four-rayed with black.

Hab. Bais, Island of Negros, Philippines; Cuming.

Very similar in form and sculpture to *F. Ruppellii*, from which it differs in respect of the orifice.



109. b



112.



114.



115.

FISSURELLA.

PLATE XV.

Species 81. (Mus. Cuming.)

FISSURELLA NIGRIRADIATA. *Fiss. testā elevato-conicā, anticē inclinatā, crassiusculā, costis radiantibus et concentricis densē et subrudē clathratā, interstitiis profundis, orificio ovato; albā, intensē nigro interruptē radiatā.*

THE BLACK-RAYED FISSURELLA. Shell elevately conical, inclined anteriorly, rather thick, closely and somewhat rudely latticed with radiating and concentric ridges, interstices deep, orifice ovate; white, rayed in an interrupted manner with intense black.

Hab. ———?

A pure white shell, rayed with about eight deep black streaks, which are here and there interrupted.

Fig. 109 a, b, c. (Mus. Cuming.)

The specimens here figured must be referred to *F. calyculata* already described. It is an extremely variable species, except in that the three posterior ribs are always larger than the rest, and the sculpture of the same plan more or less thickened.

Species 110. (Mus. Metcalfe.)

FISSURELLA ELONGATA. *Fiss. testā subelongato-oblongā, depressā, tenuiculā, costis tenuibus radiantibus et concentricis undique nilidē clathratā, orificio ovato, magno, antico; albā, maculis parvis ferrugineis hic illic sparsim notatā.*

THE ELONGATED FISSURELLA. Shell elongately oblong, depressed, rather thin, neatly latticed throughout with radiating and concentric fine ribs, orifice ovate, large, anterior; whitish, sparingly marked here and there with small rust-spots.

PHILIPPI, Abbild. und Besch. Conch. vol. ii. p. 33, Fiss. pl. 1. f. 2.

Hab. ———?

A depressed whitish shell, with a few small scattered rust-spots, and rather large orifice.

Species 111. (Mus. Belcher.)

FISSURELLA ACULEATA. *Fiss. testā oblongo-ovatā, anticē subattenuatā, depressā, medio elevatiusculā, radiatim*

costellatā, concentricē laminatā, laminis eleganter aculeato-squamatis, orificio ovato, magno; spadiceo-albā.

THE PRICKLY FISSURELLA. Shell oblong-ovate, slightly attenuated anteriorly, depressed, rather elevated in the middle, radiately finely ribbed, concentrically laminated, laminae elegantly prickly-scaled, orifice ovate, large; fawn-white.

Hab. ———?

The radiating ribs of this elegant species are almost wholly formed of elevated prickly scales.

Species 112. (Mus. Metcalfe.)

FISSURELLA CONCINNA. *Fiss. testā oblongo-ovatā, depressiusculā, medio elevatā, radiatim obscurē nodulosoliriatā, striis concentricis subcorrugatis decussatā, orificio oblongo, lateribus medio excavatis; sordidē olivaceo, nigricante-purpureo latiradiatā, orificii margine albo.*

THE PRETTY FISSURELLA. Shell oblong-ovate, rather depressed, raised in the middle, radiately obscurely nodulously ridged, decussated with subcorrugate concentric striae, orifice oblong, sides excavated in the middle; dull olive, broadly rayed with dark purple, edge of the orifice white.

PHILIPPI, Abbild. und Besch. Conch. vol. ii. p. 66. Fiss. pl. 2. f. 5.

Hab. Chili.

This species approximates very closely to *F. maxima* in a young state.

Species 113. (Mus. Belcher.)

FISSURELLA EXCELSA. *Fiss. testā elevato-conicā, anticē inclinatā, costis radiantibus et concentricis subtiliter clathratā, costis eleganter muricato-squamatis, orificio parvo, lateribus medio concinnē excavatis; fuscescente-albā, roseo-fusco hic illic maculatā.*

THE LOFTY FISSURELLA. Shell elevately conical, inclined anteriorly, finely latticed with radiating and concentric ribs which are elegantly squamate, orifice small, sides prettily excavated in the middle; brownish-white, spotted here and there with pinkish-brown.

Hab. Eastern Seas.

A remarkably high conical species, sometimes delicately sometimes stoutly squamately latticed.

elevated, more coarsely latticed, and differently perforated.

Species 114. (Mus. Cuming.)

FISSURELLA CYATHULUM. *Fiss. testā ovato-conicā, elevatā, radiatim acutè squamato-costatā, costis alternatim majoribus, liris concentricis angustis clathratis, orificio parvo, ovato; albidā, fusco variegatā.*

THE LITTLE CUP FISSURELLA. Shell ovately conical, elevated, radiately sharply squamately ribbed, ribs alternately larger, latticed with narrow concentric ridges, orifice small, ovate; whitish, variegated with brown.

Hab. —?

Somewhat like the preceding species, but not so

Species 115. (Mus. Belcher.)

FISSURELLA LIMATULA. *Fiss. testā oblongo-ovatā, anticè subattenuatā, lateribus paululum compressā, radiatim subtiliter et confertim muricato-striatā, orificio magno, ovato; albā, nigricante tinctā et radiatā.*

THE LITTLE FILE FISSURELLA. Shell oblong-ovate, somewhat attenuated anteriorly, sides a little compressed, radiately finely and closely prickly-striated, orifice large, ovate; white, stained and variegated with pale black.

Hab. —?

A depressed shell, finely prickly-striated over its surface.



116.



117.



118.



119 a.



119 c.



120.



121 a.



121 b.



122.

FISSURELLA.

PLATE XVI.

Species 116. (Mus. Cuming.)

FISSURELLA OCTAGONA. *Fiss. testā ovatā, elevatiusculā, octocostatā, liris parvis, minutè granulosis in interstitiis, orificio ovato, latiusculo, anticè inclinato; albidā, radiis latis fusciscentibus prope marginem, circa orificium cærulescente.*

THE OCTAGON FISSURELLA. Shell ovate, rather elevated, eight-ribbed, with small minutely granulated ridges in the interstices, orifice ovate, rather broad, inclined anteriorly; whitish, with broad light-brown rays near the margin, bluish around the orifice.

Hab. Island of Ticao, Philippines (on dead shells); Cuming.

As in several other species of this genus, the posterior ribs are rather more prominent than the anterior.

Species 117. (Mus. Cuming.)

FISSURELLA NIGRO-OCCELLATA. *Fiss. testā ovatā, elevatiusculā, radiatim et concentricè fortiter costatā, costis subdistantibus, interstitiis densiclastratis, orificio orbiculari; albā, maculis nigris prope marginem serialim pictā.*

THE BLACK-EYED FISSURELLA. Shell ovate, rather elevated, strongly radiately and concentrically ribbed, ribs rather distant, interstices thickly latticed, orifice orbicular; white, painted with a row of black spots near the margin.

Hab. Island of Ticao, Philippines (dredged from the depth of six fathoms); Cuming.

Characterized by a black spot in the interstice between each rib next the margin.

Species 118. (Fig. 118, 119 a, 119 b, 119 c, Mus. Cuming.)

FISSURELLA GIBBERULA. *Fiss. testā ovatā, subconicā, anticè inclinatā, radiatim costatā, costis subangustis, confertis, interstitiis subprofundè clathratis, orificio parvo; albidā, aut nigro aut viridi variegatā.*

THE SLIGHTLY GIBBOUS FISSURELLA. Shell ovate, subconical, inclined anteriorly, radiately ribbed, ribs rather narrow, close-set, interstices rather deeply

latticeed, orifice small; whitish, variegated with black or green.

Hab. Mediterranean.

The painting of this species appears to vary from black to dark olive-green, and the latticeed sculpture is more strongly developed in some specimens than in others.

Species 120. (Mus. Metcalfe.)

FISSURELLA MUS. *Fiss. testā ovatā, anticè subattenuatā, lateribus subcompressā, anticè valdè inclinatā, radiatim creberrimè tenuilimatā, striis concentricis dense decussatā, orificio oblongo, lateribus medio excavatis; albidā, cinereo-nigricante profusè et irregulariter radiatā.*

THE MOUSE FISSURELLA. Shell ovate, somewhat attenuated anteriorly, rather compressed at the sides, much inclined anteriorly, radiately very closely finely ridged, thickly decussated with concentric striae, orifice oblong, sides excavated in the middle; whitish, profusely and irregularly rayed with ash-black.

Hab. ———?

The closeness of the sculpture as above described gives to this species an elaborately granulated aspect.

Species 121. (Fig. a, Mus. Metcalfe; Fig. b, Mus. Cuming.)

FISSURELLA GEMMULATA. *Fiss. testā oblongo-ovatā, anticè inclinatā, liris tenuibus nodulosis undique confertim radiatā, orificio oblongo-ovato, parvisculo, lateribus medio excavatis; albā, cæruleo-nigricante peculiariter radiatā.*

THE BEADED FISSURELLA. Shell oblong-ovate, inclined anteriorly, closely rayed throughout with fine nodulous ridges, orifice oblong-ovate, rather small, sides excavated in the middle; white, peculiarly rayed with blue-black.

Fissurella minuta, Sowerby (not of Lamarck).

Hab. ———?

I name this shell anew on the testimony of M. Deshayes (Anim. sans vert. vol. vii. p. 599, note), that it is not

F. minuta of Lamarck, but have not have been able to identify that species.

Species 122. (Mus. Cuming.)

FISSURELLA TEGULA. *Fiss. testā conico-ovatā, crassiusculā, anticè inclinatā, levigatā, lineis impressis radiantibus obscure decussatā, orificio oblongo, lateribus subexcavatis; nigricante-cæruleā, villis angustis saturatioribus radiatā.*

THE SLATE FISSURELLA. Shell conically ovate, rather thick, inclined anteriorly, smooth, obscurely decussated with impressed radiating lines, orifice oblong, slightly excavated at the sides; blackish-blue, rayed with narrow fillets of a darker tint.

Hab. — ?

A peculiar slate-coloured species of an elevated conical form, with little indication of sculpture.

FISSURELLA.

	Plate.	Species.		Plate.	Species.
<i>aculeata, Reeve</i>	XV.	111	<i>digitalis, Reeve</i>	XIII.	92
<i>Egis, Reeve</i>	XI.	72	<i>dubia, Reeve</i>	VI.	35
<i>aqualis, Sowerby</i>	VIII.	55	<i>Dysoni, Reeve</i>	XII.	86
<i>affinis, Gray</i>	V.	26	<i>edititia, Reeve</i>	VII.	47
<i>alabastrites, Reeve</i>	V.	27	<i>elongata, Philippi</i>	XV.	110
<i>alternata, Say</i>	XII.	84	<i>Europaea, Sowerby</i>	X.	68
<i>aperta, Sowerby</i>	VI.	39	<i>excelsa, Reeve</i>	XV.	113
<i>apertura, Montagu</i>	X.	68	<i>exquisita, Reeve</i>	XI.	74
<i>aspera, Sowerby</i>	V.	30	<i>fascicularis, Lamarck</i>	VIII.	59
<i>asperella, Sowerby</i>	VIII.	58	<i>limbrata, Reeve</i>	XIV.	104
<i>atrata, Reeve</i>	XI.	73	<i>fulvescens, Sowerby</i>	VI.	42
<i>australis, Krauss</i>	XIII.	94	<i>funata, Reeve</i>	IX.	63
<i>Balanoides, Reeve</i>	X.	66	<i>funiculata, Reeve</i>	IX.	65
<i>Barbadensis (Patella), Gmelin</i>	IV.	23	<i>galericulum, Reeve</i>	XI.	77
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<i>bicolor, Adams</i>	IV.	25	<i>gibba, Philippi</i>	XVI.	118
<i>biradiata, Fremby</i>	III.	20	<i>gibberula, Lamarck</i>	XVI.	118
<i>Bridgesii, Reeve</i>	III.	16	<i>glaucoptis, Reeve</i>	V.	28
<i>calyculata, Sowerby</i>	XII.	88	<i>Græca, Lamarck</i>	X.	71
<i>cancellata, Gray</i>	X.	68	<i>Græca, nomencl.</i>	X.	68
<i>cancellata (Patella), Solander</i>	VII.	51	<i>grandis, Sowerby</i>	II.	11
<i>candida, Sowerby</i>	XIII.	89	<i>grisea, Reeve</i>	VI.	38
<i>catillus, Reeve</i>	XIII.	91	<i>hiantula, Lamarck</i>	VI.	36
<i>Cayennensis, Lamarck</i>	XII.	82	<i>Hondurasensis, Reeve</i>	VII.	48
<i>Chemnitzii, Sowerby</i>	I.	1	<i>Humphreysi, Reeve</i>	XII.	85
<i>Chilensis, Sowerby</i>	II.	14	<i>inaequalis, Sowerby</i>	VII.	50
<i>clathrata, Reeve</i>	VIII.	57	<i>Incii, Reeve</i>	X.	69
<i>clypeiformis, Sowerby</i>	I.	4	<i>Indusica, Reeve</i>	X.	67
<i>clypeus, Sowerby</i>	XI.	76	<i>Javanicensis, Sowerby</i>	VI.	36
<i>coarctata, King</i>	V.	32	<i>Jukesii, Reeve</i>	VII.	45
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<i>concinna, Philippi</i>	XV.	112	<i>lata, Sowerby</i>	I.	5
<i>Conoides, Reeve</i>	XIII.	95	<i>latimarginata, Sowerby</i>	III.	19
<i>costata, Lesson</i>	II.	14	<i>lentiginosa, Reeve</i>	XIII.	97
<i>crassa, Lamarck</i>	I.	4	<i>limatula, Reeve</i>	XV.	115
<i>crenifera, Sowerby</i>	XII.	83	<i>limbata, Sowerby</i>	II.	10
<i>crenulata, Sowerby</i>	III.	18	<i>Lincolni, Gray</i>	IX.	62
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<i>Cumingii, Reeve</i>	III.	17	<i>macrostoma, Sowerby</i>	V.	31
<i>cyathulum, Reeve</i>	XV.	114	<i>maxima, Sowerby</i>	IV.	22
<i>dactylosa, Reeve</i>	XIII.	93	<i>Mediterranea, Gray</i>	I.	3
<i>Darwini, Reeve</i>	I.	7	<i>Metcalfii, Reeve</i>	XI.	75
<i>densicathrata, Reeve</i>	IX.	64	<i>Mexicana, Sowerby</i>	VI.	40
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ERRATA.

Sp. 37. For *F. nigra*, Philippi, read *F. Philippiana*, Reeve.

Sp. 39. *F. aperta*. I have been informed by Mr. Gray that this species, his *Pupillus aperta*, is not the *Fissurellidea megalotrema* of D'Orbigny from Patagonia, but that it belongs to a different though closely allied mollusk inhabiting Port Natal, as figured by Dr. Krauss in his 'Sudafricanischen Mollusken,' pl. 4. f. 11. Having no authentic specimens of the Patagonian species, by which to identify it with certainty, I was struck with the resemblance of the shell before me to D'Orbigny's figures.

Sp. 70. For *F. Hondurasensis*, read *F. suffusa*, Reeve.

Sp. 90. For *F. exquisita*, read *F. venusta*, Reeve.

Sp. 118. *F. gibberula*, add authority, Lamarck, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 599; and synonyme *F. gibba*, Philippi.

MONOGRAPH

OF THE GENUS

PARTULA.

Almighty God, and full of might,
By whom all thing is made of nought,
'To thee my heart is ready dight,
For upon thee is all my thought.
Old Hymn of Abel.



PARTULA.

PLATE I.

Genus PARTULA, Férussac.

Testa parviuscula, acuminato-ovata vel oblonga, basin versus plerumque obliquè producta, parum umbilicata, anfractibus quinque ad sex, plus minus lævibus, lineis impressis spiralibus minutè insculptis, columellâ incrassatâ, plano-appressâ, aperturâ subquadrato-ovatâ, labro latè planireflexo, interdum calloso.

Shell rather small, acuminate ovate or oblong, generally obliquely produced towards the base, but little umbilicated, whorls five to six in number, more or less smooth, minutely engraved with impressed spiral lines, columella thickened, flatly appressed, aperture somewhat squarely ovate, lip broadly flatly reflected, sometimes callous.

Partula is the Polynesian type of that tribe of snails which is represented in other parts of the world by the genus *Bulinus*; and it is questioned by many whether, under these circumstances, seeing that there is no difference in the soft parts, it claims to rank as a genus. The *Partula* have a strong peculiarity of form, plan of colouring, and even of sculpture. The shells are distinguished by a comparative uniformity of size and substance, and all are more or less conspicuously engraved with fine spiral impressed lines; whilst the aperture is peculiar in being produced somewhat obliquely, and in having mostly an auricular aspect, owing to the callous thickening of the lip, which is invariably broadly flatly reflected.

De Férussac was the first to note the particular local character of what may be termed the *Bulini* of the Pacific Islands, and the present genus, by which he proposed to distinguish them, obtained considerable additional interest from the species added to it by Mr. Broderip, from Mr. Cuming's gleanings in that locality. The views of De Férussac and Broderip have not been adopted by Dr. Pfeiffer, but they appear to be very generally followed by collectors in this country; and the characters above recorded for generic purposes render the species easy of detection.

There is one species, *P. auricula*, which differs from the typical character of the group in having two elevated plaits entering into the aperture, one upon the columella and another upon the body-whorl, which does not appear to be a modification of the callosity often present in that part of the shell. It is much smaller in size, and might prove hereafter to constitute the type of another genus.

Species 1. (Fig. a, b, c, Mus. Cuming.)

PARTULA ROSEA. *Part. testâ pyramidal-ovatâ, umbilicatâ, basin versus obliquè productâ, tenuiculâ, anfractibus plano-convexis, spiraliter minutè impresso-lineatis, anfractu ultimo obsoletè angulato, aperturâ quadrato-ovalî; castaneo-roseâ, interdum latro fasciatâ, aperture fauce nunc albâ, nunc roseo tinctâ.*

THE ROSE PARTULA. Shell pyramidally ovate, umbilicated, obliquely produced towards the base, rather thin, whorls flatly convex, spirally minutely impressly lineated, last whorl obsoletely angled, aperture squarely oval; chestnut-rose, sometimes banded with yellow, interior of the aperture white, or stained with rose.

BRODERIP, Pro. Zool. Soc. 1832, p. 125.

Hab. Huabeine, Society Islands; Cuming.

Distinguished by its acuminate form, which is obsoletely angled towards the base, then produced somewhat obliquely. The shell is moreover of light substance, and delicately coloured more or less with dark chestnut-rose and yellow.

Species 2. (Mus. Cuming.)

PARTULA BRUMALIS. *Part. testâ subacuminato-oblongâ, umbilicatâ, anfractibus spiraliter minutè impresso-lineatis, aperturâ ovatâ, columellâ labroque latè reflexis; fulvo-castaneâ, labro albo.*

THE WINTERLY PARTULA. Shell somewhat acuminate oblong, umbilicated, whorls spirally minutely impressly lineated, aperture ovate, lip and columella broadly reflected; fulvous-chestnut, lip white.

Hab. — ?

Closely allied to *P. Guamensis*, from which it differs in being of a more oblong acuminate form; it is of one uniform colour throughout.

Species 3. (Fig. a and b, Mus. Cuming.)

PARTULA INFLATA. *Part. testâ conico-ovatâ, umbilicatâ, spirâ breviusculâ, anfractibus valdè inflatis, ultimo angulato-gibbosis, concentricè rudè striatis, spiraliter minutè impresso-lineatis, lineis undulatis, aperturâ parviusculâ, columellâ labroque latissimè planireflexis; albâ vel pallidè cinnamomeâ, epidermide tenui indutâ, labro albo.*

THE INFLATED PARTULA. Shell conically ovate, umbilicated, spire rather short, whorls considerably inflated, last whorl angularly gibbous, concentrically rudely striated, spirally minutely impressly lineated, lines slightly waved, aperture rather small, lip and columella very broadly flatly reflected; white or pale cinnamon, covered with a thin epidermis, lip white.

REEVE, Pro. Zool. Soc. 1842, p. 197, and Conch. Syst. vol. ii. pl. 175. f. 11, 12.

Bulimus Thersites, Pfeiffer.

Hab. Sandwich Islands.

Well characterized by its light gibbous inflated growth.

Species 4. (Mus. Cuming.)

PARTULA GUAMENSIS. *Part. testā ovatā, ventricosā, umbilicatā, spirā breviusculā, anfractibus subrotundatis, spiraliter minutè impresso-lineatis, aperturā subamplā; intensè castaneā, labro purpurascente-albo.*

THE GUAM PARTULA. Shell ovate, ventricose, umbilicated, spire rather short, whorls somewhat round, spirally minutely impressly lineated, aperture rather large; dark chestnut, lip purplish-white.

Bulimus Guamensis, Pfeiffer, Phil. Abbild. und Besch. Conch. *Bol.* pl. 4. f. 9.

Hab. Island of Guam, Ladrões.

This species has a swollen appearance, and is of less solid substance than the following.

Species 5. (Fig. a, b, c, Mus. Cuming.)

PARTULA FABA. *Part. testā acuminato-oblongā, umbilicatā, solidiusculā, anfractibus subplano-convexis, paucis primis sub lente minutè spiraliter lineatis, columellā latè reflexā, tuberculatā, aperturā subquadrato-ovali, labro latè planireflexo, intus calloso; intensè castaneā aut fulvā, fusco strigatā, interdum nigrifasciatā.*

THE BEAN PARTULA. Shell acuminate oblong, umbilicated, rather solid, whorls somewhat flatly convex, the first few minutely spirally impressly lineated beneath the lens, columella broadly reflected, tuberculated, aperture somewhat squarely oval, lip broadly flatly reflected, callous inwardly; dark chestnut or fulvous, streaked with brown, sometimes black-banded.

SOWERBY, Zool. Beechey's Voyage, p. 144. pl. 38. f. 4.

Limax faba, Martyn.

Helix faba, Gmelin.

Auris-Mida fasciata, Chemnitz.

Voluta fasciata, Dillwyn.

Bulimus australis, Bruguière.

Partula australis, Férussac.

Bulimus faba, Lamarck.

Partula Bulimoides, Lesson.

Hab. Ulitea, Society Islands (on bushes); Cuming.

Remarkable for its solid growth and broadly flattened lip. It is extremely variable in colour, being dark chestnut, or fulvous, or partaking of both colours, and is found in great abundance.



PARTULA.

PLATE II.

Species 6. (Fig. a, b, Mus. Cuming.)

PARTULA RADIOLATA. *Part. testâ oblongâ, tenuiculâ, umbilicatâ, basin versus obliquè productâ, anfractibus quinque, convexis, lineis impressis spiralibus subdistantibus cingulatis, columellâ latè reflexâ, plano-appressâ, aperturâ obliquè ovalâ, labro tenuiculo, latè reflexo; semipellucidâ, pallidè stramineâ aut cinnamomeo-rufescente, lineis opaco-albis obliquè promiscuè notatâ.*

THE DELICATELY RAYED PARTULA. Shell oblong, rather thin, umbilicated, obliquely produced towards the base, whorls five in number, convex, encircled with rather distant spiral impressed lines, columella broadly reflected, flatly appressed, aperture obliquely ovate, lip rather thin, broadly reflected; semitransparent, pale straw-colour or cinnamon-red, promiscuously marked with oblique opaque-white lines.

Bulinus radiolatus, Pfeiffer, Pro. Zool. Soc. 1846, p. 39.

Hab. Island of Guam, Ladrones (on bushes); Cuming.

An extremely delicate species, of a light straw-colour, or pale cinnamon-red, profusely obliquely marked with fine opaque-white lines.

Species 7. (Mus. Cuming.)

PARTULA LINEATA. *Part. testâ acuminato-oblongâ, umbilicatâ, tenuiculâ, anfractibus sex, spiraliter tenuissimè impresso-striatis; fulvescente, subpellucidâ, fasciis duabus castaneis distantibus cingulatâ.*

THE LINEATED PARTULA. Shell acuminately oblong, umbilicated, rather thin, whorls six in number, spirally very finely impressly striated; light fulvous, subtransparent, encircled with two distant chestnut bands.

LESSON, *Voyage de la Coquille*, p. 324. pl. 7. f. 8, 9.

Hab. Friendly Islands.

The lower of the two widely separated chestnut bands which encircle this species is only seen on the last whorl.

Species 8. (Fig. 8 a, and 10, Mus. Cuming.)

PARTULA AMABILIS. *Part. testâ pyramidal-oblongâ, sinistrorâ, subturritâ, viz umbilicatâ, anfractibus sex, convexis, obliquè tenuistriatis, ad suturas obscurè subtilissimè crenulatis; fulvescente, castaneo conspicuè latifasciatâ, interdum aurantio-fulvescente, apicem ver-*

sus eximè roseâ, aperturæ labro interdum livido-purpurascente.

THE LOVELY PARTULA. Shell pyramidally oblong, sinistral, somewhat turreted, scarcely umbilicated, whorls six in number, convex, obliquely finely striated, obscurely very finely crenulated at the sutures; fulvous, conspicuously broadly banded with chestnut, sometimes orange-fulvous, tinged with rose towards the apex, lip sometimes livid purple.

Bulinus amabilis, Pfeiffer, Pro. Zool. Soc. 1846, p. 38.

Hab. Island of Annaa; Captain Rohr.

The fine spiral impressed lines which characterize most of the species are absent in this.

Species 9. (Mus. Cuming.)

PARTULA DENSILINEATA. *Part. testâ acuminato-conicâ, tenuiculâ, umbilicatâ, spiræ suturis impressis, anfractibus superne subplanulatis et tenuimarginatis, inferne rotundatis aut leviter angulatis, columellâ plano-reflexâ, obsolete plicatâ, aperturâ ovali, labro parum reflexo; albicante, lineis obliquis ferrugineis cinereisque densissimè pictâ.*

THE THICKLY-LINEATED PARTULA. Shell acuminately conical, rather thin, umbilicated, sutures of the spire impressed, whorls rather flattened and finely margined at the upper part, rounded and slightly angled at the lower, columella flatly reflected, obsolete plicate, aperture ovate, lip but little reflected; whitish, very thickly painted with oblique rust and ash lines.

Hab. —?

The lip of this shell, the only example of the species known to me, is scarcely mature. The linear painting is discontinued before reaching the umbilicus.

Species 10. (Fig. 8 b, Mus. Cuming.)

PARTULA ISABELLINA. *Part. testâ oblongâ, crassâ, umbilicatâ, anfractibus quinque, convexis, obliquè striatis, apicem versus, sub lente, tenuissimè spiraliter impresso-lineatis, columellâ incrassatâ, plicato-gibbâ, callositate superne munitâ, aperturâ obliquè productâ, labro calloso-reflexo; sordidè flavicante, labro albo.*

THE SOILED PARTULA. Shell oblong, thick, umbilicated, whorls five in number, convex, obliquely striated, very finely spirally impressly lineated towards the

PARTULA.—PLATE II.

apex beneath the lens, columella thickened, furnished above with a callosity, plicately gibbous, aperture obliquely produced, lip callously reflected; dull yellowish, lip white.

Bulimus isabellinus, Pfeiffer, Pro. Zool. Soc. 1846, p. 39.
Hab. —?

Of this species also only a single specimen is yet known. It is allied to the following, but is essentially distinguished by its more oblong form.

Species 11. (Fig. a, b, c, Mus. Cuming.)

PARTULA OTAHEITANA. *Part. testā globoso-conicā, crassissimā, interdum sinistrorsā, umbilicatā, anfractibus quinque, convexis, laevibus, apicem versus, sub lente, tenuissimè impresso-lineatis, columellā incrassatā, callositate saepe supernè munitā, aperturā auriculatā, labro*

valdè calloso; castaneā, aut luteā, aut castaneo testaceo fasciatā, labro albo.

THE OTAHEITE PARTULA. Shell globose, conical, very thick, umbilicated, sometimes sinistral, whorls five in number, convex, smooth, very finely impressly lineated towards the apex beneath the lens, columella thickened, often furnished with a callosity above, aperture auriculated, lip very callous; chestnut, or yellow, or chestnut and yellow banded, lip white.

Bulimus Otaheitanus, Bruguière, Enc. Méth. vol. i. p. 347.
Helix perversa, Chemnitz.

Eadem varietas. *Partula auriculata*, Broderip.

Hab. Society Islands.

An extremely variable species, of which Fig. 13 a, b, in the next plate, represents its most slender form, and the figures which accompany this description its most gibbous state, with callosity, constituting Mr. Broderip's *P. auriculata*.



13 a.



16.



17. b.



PARTULA.

PLATE III.

Species 12. (Mus. Cuming.)

PARTULA RUBESCENS. *Part. testâ acuminato-oblongâ, crassiusculâ, sinistrorsâ, compressè umbilicatâ, anfractibus sex, lævibus, subrotundatis, columellâ labroque planireflexis; rosaceâ, apicem versus rubro-fuscâ.*

THE PINK PARTULA. Shell acuminate oblong, rather thick, sinistral, compressly umbilicated, whorls six in number, smooth, somewhat rounded, lip and columella broadly reflected; pink, red-brown towards the apex.

Hab. — ?

This species, of which Mr. Cuming possesses three specimens, is larger than *P. rosea*, and of more solid acuminate growth.

Fig. 13 a, b. (Mus. Cuming.)

PARTULA OTAHEITANA. The shells here figured represent the sinistral and more slender state of the above-named species, described in the preceding plate. This variety has been erroneously labelled in collections *P. australis*, which is only another name of *P. faba*.

For Species 13, see Plate IV.

Species 14. (Mus. Cuming.)

PARTULA HYALINA. *Part. testâ oblongâ, viz umbilicatâ, anfractibus sex, obliquè lævissimè subrudè striatis, lineis spiralibus impressis minutè et creberrimè sculptâ; pelucido-albâ.*

THE HYALINE PARTULA. Shell oblong, scarcely umbilicated, whorls six in number, obliquely very lightly but rudely striated, and minutely very closely engraved with impressed lines; transparent white.

BRODERIP, Pro. Zool. Soc. 1832, p. 32.

Hab. Tumaco, Society Islands (on the Ti plant); Cuming.

A delicate pellucid bluish-white shell, elaborately carved, beneath the lens, with spiral impressed lines.

Species 15. (Fig. a, b, Mus. Cuming.)

PARTULA GIBBA. *Part. testâ ovato-conicâ, basin versus gibbâ et latè inflatâ, umbilicatâ, spirâ brevi, acutâ, anfractibus quinque, convexis, sub lente spiraler creber-*

rimè impresso-lineatis, aperturâ subquadrato-ovali, obliquè productâ; flavicante, apicem versus rosæ, vel cineræ, suturis albis.

THE GIBBOUS PARTULA. Shell ovately conical, gibbous and broadly inflated towards the base, umbilicated, spire short, sharp, whorls five in number, convex, spirally very closely impressly lineated beneath the lens, aperture somewhat squarely ovate, obliquely produced; yellowish, tinged with rose towards the apex, or ash, sutures white.

FERUSSAC, Prodrome, p. 66.

Bulimus gibbus, Quoy.

Hab. Sandwich Islands (on plants); Quoy and Guimard.

There are two very distinct varieties of this species; one of pale yellow tipped with rose, the other of an uniform ash-colour, in which the white sutures are more conspicuous.

Species 16. (Mus. Cuming.)

PARTULA GANYMEDES. *Part. testâ oblongo-conicâ, tenuiculâ, umbilicatâ, anfractibus quinque, convexis, obliquè leviter subrudè striatis, lineis spiralibus impressis minutissimè et creberrimè sub lente sculptis, aperturâ subquadrato-ovali, columellâ labroque latè planireflexis; albâ, anpellucidâ, fasciâ unicâ castaneâ cingulatâ, epidermide tenuissimâ indutâ.*

GANYMEDE'S PARTULA. Shell oblong-conical, rather thin, umbilicated, whorls five in number, convex, obliquely lightly somewhat rudely striated, very minutely and closely sculptured, beneath the lens, with impressed lines, aperture somewhat squarely ovate, lip and columella broadly flatly reflected; white, somewhat transparent, encircled with a single chestnut band, covered with a very thin fugacious epidermis.

Bulimus Ganymedes, Pfeiffer, Pro. Zool. Soc. 1846, p. 39.

Hab. Society Islands.

Only the upper edge of the chestnut band is left visible in the first four whorls of this very elegant and characteristic species.

Species 17. (Fig. a, b, c, Mus. Cuming.)

PARTULA VARIA. *Part. testâ acuminato-ovatâ, tenuiculâ,*

PARTULA.—PLATE III.

compressè umbilicatâ, anfractibus quinque, convexis, lævibus, nitentibus, nisi sub lente minutissimè spiraliter impresso-lineatis, aperturâ subquadrato-ovalâ, obliquâ; flavicante, aut purpureo-castaneâ, aut flavicante et purpureo-castaneo fasciatâ, labro colore interdum tincto, apice sæpe nigricante.

THE VARIABLE PARTULA. Shell acuminate ovate, rather thin, compressly umbilicated, whorls five in number, convex, smooth, shining, unless very minutely spirally impressly lineated beneath the lens,

aperture somewhat squarely ovate, oblique; yellowish, or purple-chestnut, or yellow and purple-chestnut banded, lip sometimes stained with colour, apex often blackish.

BRODERIP, Pro. Zool. Soc. 1832, p. 125.

Hab. Society and Navigator's Islands (on bushes); Cuming.

Dr. Pfeiffer regards this species as a variety of *P. rosea*. Both species are extremely variable in their colouring, but the species and their varieties are clearly distinct the one series from the other.



13.



16. 2



19.



21.



22.



23.



24.



25.

PARTULA.

PLATE IV.

Species 13. (Mus. Cuming.)

PARTULA CARTERETENSIS. *Part. testā oblongo-ovalā, compressē umbilicatā, anfractibus convexis, obliquē irregulariter striatis, lineis impressis spiralibus minutē sculptis, aperturā ovalā, marginibus laminā tenuissimā callosā junctis; semipellucido-albā, fulvo tinctā.*

THE PORT CARTERET PARTULA. Shell oblong-ovate, compressly umbilicated, whorls convex, obliquely irregularly striated, minutely sculptured with impressed spiral lines, aperture ovate, margins joined by a thin callous lamina; semitransparent white, fulvous-stained.

Hellē Carteriensis, Quoy and Gaimard, Voy. de l'Astrol. vol. ii. p. 117. pl. 9. f. 10, 11.

Bulinus Carteriensis, Pfeiffer.

Hab. Port Carteret, New Ireland, Pacific Ocean; Quoy.

Allied to *P. hyalina*, but of a more compressed oblong form and of a substance rather more opaque.

Species 18. (Fig. a, b, Mus. Cuming.)

PARTULA AURICULA. *Part. testā oblongo-conicā, solidiusculā, basin versus obliquē productā, subumbilicatā, anfractibus planiconvexis, levibus, ultimo basi obsolete carinato, aperturā subquadrato-ovalī, laminis duabus prominentibus erectis intrantibus munitā; albā, nunc luteo, nunc rufo-fusco cingulatā.*

THE EAR PARTULA. Shell oblong-conical, rather solid, obliquely produced towards the base, slightly umbilicated, whorls flatly convex, smooth, last whorl obsolete keeled, aperture somewhat squarely ovate, with two prominent erect laminae entering into it; white, encircled sometimes with yellow, sometimes with red-brown.

FERUSSAC, Prodrome, p. 66.

Partula Dumartroyi, Souleyet.

Auricula Owaikiensis, Chamisso.

Bulinus auricula, Pfeiffer.

Eadem sinistrorsa.

Auricula sinistrorsa, Chamisso.

Bulinus armatus, Mighels.

Hab. Sandwich Islands.

The chief peculiarity of this little species consists in the presence of two sharp erect laminae, which enter the

aperture, one on the columella, and another on the body-whorl, which is not a modification of the callosity often present in that part of the shell.

Species 19. (Mus. Cuming.)

PARTULA GONOCHEILA. *Part. testā subabbreviato-ovalā, ventricosā, compressē umbilicatā, anfractibus rotundatis, obliquē irregulariter striatis, lineis impressis spiralibus minutē sculptis, aperturā ovalā, columellā labroque latē planireflexis, labro supernē leviter contracto; semipellucido-fulvā, epidermide tenuissimā, interdum bifasciatā, indutā.*

THE ANGLE-LIPPED PARTULA. Shell somewhat abbreviately ovate, ventricose, compressly umbilicated, whorls rounded, obliquely irregularly striated, minutely sculptured with spiral impressed lines, aperture ovate, lip and columella broadly flatly reflected, lip a little contracted at the upper part; semitransparent fulvous, covered with a very slight epidermis, sometimes disposed in two bands.

PFEIFFER, MS. (Mus. Cuming).

Hab. Navigators' Islands, Pacific Ocean.

A somewhat globose semitransparent shell, with an extremely delicate epidermis, which is partly bi-membranous and hydrophanous in bands.

Species 20. (Mus. Cuming.)

PARTULA COMPRESSA. *Part. testā acuminato-oblonga, crassiusculā, basin versus obliquē productā, subampliter compressē umbilicatā, anfractibus convexis, obliquē striatis, viz spiraliter lineatis, anfractu ultimo basi rotundato-angulato, aperturā oblongā, labro declivi-reflexo, supernē leviter contracto; intensē castaneā, labro et aperturā fauce livido-purpureis.*

THE COMPRESSED PARTULA. Shell acuminately oblong, rather thick, obliquely produced towards the base, rather largely compressly umbilicated, whorls convex, obliquely striated, very slightly spirally lined, last whorl rotundately angled at the base, aperture oblong, lip reflected in a slanting direction, a little contracted at the upper part; dark chestnut-brown, lip and interior of the aperture livid purple.

PFEIFFER, MS. (Mus. Cuming).

Hab. Society Islands.

PARTULA.—PLATE IV.

The compressed form of this shell is characteristic, and so also is the livid-purple colouring of the interior.

Species 21. (Mus. Cuming.)

PARTULA NAVIGATORIA. *Part. testā oblongo-ovatā, crassiusculā, medio ventricosā, angustē umbilicatā, anfractibus subrudē obliquē striatis, viz spiraliter lineatis, aperturā auriculatā, columellā labroque latē calloso-reflexis; fulvo-castaneā, labro albido.*

THE NAVIGATOR PARTULA. Shell oblong-ovate, rather thick, slightly ventricose in the middle, narrowly umbilicated, whorls somewhat rudely striated, scarcely spirally lineated, aperture auriculate, the lip and columella being broadly callously reflected; fulvous chestnut, lip white.

PFEIFFER, MS. (Mus. Cuming.)

Hab. Navigators' Islands.

The aperture of this species, which may be distinguished by its oblong-oval form, slightly ventricose in the middle only, is very similar to that of *P. Otaheitana*.

Species 22. (Mus. Cuming.)

PARTULA SOLIDULA. *Part. testā acuminato-ovatā, subgibbosā, compressē umbilicatā, solidulā, anfractibus planiconveris, obliquē irregulariter striatis, lineis spiralibus impressis minutē sculptis, aperturā auriculatā, columellā labroque latē calloso-reflexis; stramineā, apice interdum rufescente, labro albo.*

THE SOLID PARTULA. Shell acuminately ovate, rather gibbous, compressly umbilicated, solid, whorls flatly convex, obliquely irregularly striated, minutely sculptured with spiral impressed lines, aperture auriculate, the lip and columella being broadly callously reflected; straw-colour, sometimes reddish at the apex.

Hab. Society Islands.

A solid subtransparent shell, having the character and substance of *P. Otaheitana* with the form and colouring of *P. gibba*; excepting that the whorls are not crowned with the white sutural band which is constant in that species.

Species 23. (Mus. Cuming.)

PARTULA DECUSSATULA. *Part. testā subabbreviato-ovatā, tenni, inflatā, anfractibus quatuor, convexis, striis obliquis lineisque spiralibus impressis eximie decussatis,*

aperturā subcontractā, rotundato-ovatā, labro parum reflexo; pellucido-albā.

THE DECUSSATED PARTULA. Shell somewhat abbreviately ovate, thin, inflated, whorls four in number, convex, faintly decussated with oblique striæ and spiral impressed lines, aperture rather contracted, rotundately ovate, lip but little reflected; transparent white.

PFEIFFER, MS. (Mus. Cuming.)

Hab. — ?

A thinner and more inflated shell than *P. hyalina*, and equally transparent.

Species 24. (Mus. Cuming.)

PARTULA SPADICEA. *Part. testā acuminato-oblongā, tenuiculā, compressē umbilicatā, anfractibus convexis, striis obliquis lineisque spiralibus impressis eximie decussatis, aperturā ovatā, parviusculā, columellā plano-appressā, labro declivi-reflexo; pellucido-spadiceā, labro albido.*

THE FAWN PARTULA. Shell acuminately oblong, rather thin, compressly umbilicated, whorls convex, faintly decussated with oblique striæ and spiral impressed lines, aperture ovate, rather small, columella flatly appressed, lip reflected in a slanting direction; transparent fawn-colour, lip whitish.

Hab. Marquesas Islands.

A delicate subtransparent shell, of a uniform transparent fawn-colour.

Species 25. (Mus. Cuming.)

PARTULA HEBE. *Part. testā abbreviato-conicā, globosā, gibbosā, solidulā, umbilicatā, anfractibus rotundatis, striis obliquis subrugosis lineisque spiralibus impressis decussatā, aperturā orbiculari, callositate erectā supra columellam, columellā labroque calloso-reflexis; semipellucido-albā.*

HEBE'S PARTULA. Shell abbreviately conical, globose, gibbous, rather solid, umbilicated, whorls rounded, decussated with rather rough oblique striæ and spiral impressed lines, aperture orbicular, with an erect callosity above the columella, lip and columella callously reflected; semitransparent white.

PFEIFFER, Pro. Zool. Soc. 1846. p. 39.

Hab. Society Islands.

Distinguished by its short globose manner of convolution.

PARTULA.

	Plate.	Species		Plate.	Species.
<i>amabilis</i> (<i>Bul.</i>), Lesson	II.	8	<i>Guamensis</i> (<i>Bul.</i>), Pfr.	I.	4
<i>auricula</i> , <i>Férussac</i>	IV.	18	<i>Hebe</i> (<i>Bul.</i>), Pfr.	IV.	25
<i>auriculata</i> , Brod.	II.	11	<i>hyalina</i> , <i>Broderip</i>	III.	14
<i>brunialis</i> , <i>Reeve</i>	I.	2	<i>inflata</i> , <i>Reeve</i>	I.	3
<i>Bulinoides</i> , Lesson	I.	5	<i>isabellina</i> (<i>Bul.</i>), Pfr.	II.	10
<i>Carteretensis</i> (<i>Helix</i>), Quoy	IV.	13	<i>lineata</i> , <i>Lesson</i>	II.	7
<i>compressa</i> (<i>Bul.</i>), Pfr.	IV.	20	<i>Navigatoria</i> (<i>Bul.</i>), Pfr.	IV.	21
<i>deussatula</i> (<i>Bul.</i>), Pfr.	IV.	23	<i>Otaheitana</i> (<i>Bul.</i>), Brug.	II.	11
<i>densilincata</i> , <i>Reeve</i>	II.	9	<i>radiolata</i> (<i>Bul.</i>), Pfr.	II.	6
<i>Dumartroyi</i> , Sonleyet	IV.	18	<i>rosea</i> , <i>Broderip</i>	I.	1
<i>fabia</i> (<i>Linax</i>), Martyn	I.	5	<i>rubescens</i> , <i>Reeve</i>	III.	12
<i>Ganymedes</i> (<i>Bul.</i>), Pfr.	III.	16	<i>solidula</i> , <i>Reeve</i>	IV.	22
<i>gibba</i> (<i>Bul.</i>), Quoy	III.	15	<i>spadicea</i> , <i>Reeve</i>	IV.	24
<i>goniocheila</i> (<i>Bul.</i>), Pfr.	IV.	19	<i>varia</i> , <i>Broderip</i>	III.	17

MONOGRAPH

OF THE GENUS

A C H A T I N E L L A .

Nature, that formed us of four elements,
Warring within our breasts for regiment,
Doth teach us all to have aspiring minds ;
Our souls, whose faculties can comprehend
The wondrous architecture of the world,
Still climbing after knowledge infinite,
Will us to wear ourselves and never rest,
Until we reach the ripest fruit of all.—*Marlowe.*



5. a.



5. b.



ACHATINELLA.

PLATE I.

Genus ACHATINELLA, Swainson.

Testa parviuscula, conica, aut sinistrorsa aut dextrorsa, haud umbilicata, anfractibus plerumque sex ad septem et levibus, columellâ brevi, latè appressâ, callosâ et æpiassimè contortâ, aperturâ parviusculâ, labro simplici, interdum subincrassato, nunquam reflexo.

Shell rather small, conical, either sinistral or dextral, not umbilicated, whorls generally six to seven in number and smooth, columella short, broadly appressed, callous and mostly twisted, aperture rather small, lip simple, sometimes rather thickened, never reflected.

The gaily painted shells which form the subject of the present monograph have an especial claim to the honour of being ranked as a genus. They are nearly all of an uniform size and substance, they are characterized by the same plan of convolution, of from six to seven whorls, never umbilicated, by a similar vivid design of colouring, and by a peculiarly callous twisted plicate structure of the columella; the genus is, moreover, confined to one particular isolated locality, the Sandwich Islands. An exception must, however, be made in part to these remarks, in reference to three small horny species, *A. clarus*, *pyramis*, and *corneola*, placed in the genus by Dr. Pfeiffer, which are more nearly allied to the *Glandina* division of the *Achatina*, and might be appropriately removed hence.

The generic character of *Achatinella* was observed about the same time by Swainson in England, and by Pérussac in France; the former in his descriptions and figures of new species in the 'Zoological Illustrations,' and the latter in a plate devoted to the few species then known to him, towards the close of his great work on the terrestrial mollusca. The *Achatinellæ* were also noted in the United States about the same period by Professor Green, of Philadelphia, in a short memoir communicated to the Maculurian Lyceum of that city; and some important species were subsequently contributed by Professor Mighels and Dr. Gould, of that rising seat of scientific learning, Boston, Massachusetts.

None of the *Achatinellæ* were known to Linnæus; nor even to Chemnitz, until the completion of his great work. In the last plate of the Conchylien Cabinet there is a figure of *A. perversa*, under the generic name of *Turbo*, and in a plate just preceding that, is a figure of *A. lugubris*, referred to the same marine genus. Lamarck had no more

acquaintance with the *Achatinellæ* than Chemnitz. The same species which came under the observation of Chemnitz, *A. lugubris*, was observed by Lamarck, who, supposing it, like him, to belong to a mollusk of salt-water habits on account of its polished substance, referred it in error to the same marine family, independently of any knowledge that his *Monodonta seminigra* and the *Turbo lugubris* of the Conchylien Cabinet were one and the same thing.

In the valuable monograph of this genus lately published by Dr. Pfeiffer, there are some points in which I find occasion to differ from him. *A. bicolor*, Jay, does not participate in the essential characters of the genus, and is referred to *Achatina*. *A. plicata* is a very abnormal form, having little if any indication of the callous twisted columella, whilst it is of a different substance from the rest of the species, and the only one with any external raised sculpture, but this I have allowed to remain; as also the three horny species already mentioned partaking of the *Glandina* type. *A. Bulimoides*, Swainson, is distinct from *A. lorata*, Pérussac, and both differ essentially from *A. mustelina*, Mighels. *A. Stewarti* cannot be safely regarded as a variety of *A. vulpina*, nor is Swainson's *A. perversa* identical with Pérussac's *A. decora*. The species are extremely variable throughout in colour, but it is important not to throw too many of them together on this account, whilst each, regarded strictly, appears to be characterized by regularity of form and general unity of design.

As already noted in regard to the geographical position of the genus, the *Achatinellæ* are confined to the Sandwich Islands, where they represent the *Achatinæ* or *Bulimi* of the continent.

Species 1. (Mus. Cuming.)

ACHATINELLA NUBILOSA. *Achat. testâ ovato-oblongâ, dextrorsâ, anfractibus rotundatis, longitudinaliter plicato-striatis, ad suturas leviter crenulatis, columellâ uniplicatâ, plicâ compressâ, marginali; carneo-atramineâ, flammis nigricante-olivaceis irregulariter striatâ et reticulatâ, apice rubente-fuscâ, aperturæ faucibus albicantibus.*

THE CLOUDED ACHATINELLA. Shell ovately oblong, dextral, whorls rounded, longitudinally plicately striated, slightly crenulated at the sutures, columella furnished with a single compressed marginal plait:

flesh-tinged straw-colour, irregularly striated and reticulated with blackish-olive flames, interior of the aperture whitish.

MIGHELS, Pro. Boston Nat. Hist. Soc. 1845, p. 20.

Hab. Oahu, Sandwich Islands.

Elegantly streaked and reticulated with dark olive upon a warm cream-yellow ground, very promiscuously clouded in some specimens, as in *A. picta* and *venusta*.

Species 2. (Fig. a and b, Mus. Cuming.)

ACHATINELLA PALLIDA. *Achat. testā acuminato-ovatā, solidiusculā, anfractibus plano-convexis, obliquē subrudē striatis, supernē marginatis, sulco suturis subremoto, columellā brevi, latē callosā; albā, fusco vel castaneo-nigricante plus minus fasciatā, columellā labroque fuscescente-carneis.*

THE PALE ACHATINELLA. Shell acuminate ovate, rather solid, whorls flatly convex, obliquely somewhat rudely striated, margined round the upper part, the groove being rather distant from the sutures, columella short, broadly callous; white, more or less banded with brown or chestnut-black, lip and columella brownish-flesh.

NUTTALL, Jay's Catalogue of Shells, 1839, p. 58.

Eadem var. *Achatinella alba*, Nuttall.

Hab. Wahoo, Sandwich Islands; Nuttall.

Allied to *A. decora*, from which it is distinguished by its more acuminate and less ventricose form.

Species 3. (Fig. 3, 4, 5, Mus. Cuming.)

ACHATINELLA VIRGULATA. *Achat. testā oblongo-ovatā, ventricosā, aut sinistrorsā aut dextrorsā, anfractibus medio plano-convexis, supernē tumidiusculis, lineis spiralibus et obliquis undique minutē decussatis, columellā callosā; albidā aut lacteā, vittis castaneis, nunc angustis, nunc latiusculis, cingulatā, fasciā conspicuā purpureo-fusā prope ad apicem.*

THE STRIPED ACHATINELLA. Shell oblong-ovate, ventricose, either sinistral or dextral, whorls flatly convex in the middle, rather swollen round the upper part, minutely decussated throughout with spiral and oblique lines, columella callous; white or cream-colour, encircled with chestnut fillets, promiscuously broad or narrow, and a conspicuous dark purple-brown band near the apex.

Partula virgulata, Mighels, Pro. Boston Nat. Hist. Soc. 1845, p. 20.

Achatinella Rohri, Pfeiffer.

Bulimus Rohri, Pfeiffer.

Eadem var. *Bulimus insignis*, Mighels.

Hab. Sandwich Islands (on bushes); Rohr.

This fine species, which has been referred in turn to the genera *Partula* and *Bulimus*, belongs unquestionably to the genus under consideration, for which it is well characterized

by its peculiarity of form, structure of lip and columella, and design of painting.

For Species 4 and 5, see Pl. VI.

Species 6. (Mus. Cuming.)

ACHATINELLA LORATA. *Achat. testā ovato-conicā, dextrorsā, solidiusculā, anfractibus plano-convexis, levibus, ad suturas marginatis, columellā brevi, latē appressā, callosā, aperturā parviusculā; castaneo-brunneā, suturis saturatioribus, fasciā unicā albā cingulatā.*

THE BELTED ACHATINELLA. Shell ovately conical, dextral, rather solid, whorls flatly convex, smooth, margined at the sutures, columella short, broadly appressed, callous, aperture rather small; chestnut-brown, encircled with a single white band.

Helix (Cochlogena) lorata, Férussac, Hist. Moll. pl. 155. f. 9-11.

Hab. Sandwich Islands.

A. mustelina and *Bulimoides*, which Dr. Pfeiffer quotes as synonyms of this species, are certainly distinct.

Species 7. (Mus. Cuming.)

ACHATINELLA TENIOLATA. *Achat. testā ovatā, dextrorsā, subventricosā, anfractibus convexis, levibus, columellā brevi, latē appressā, aperturā parviusculā; albidā, fusco variē fasciatā.*

THE FILLETED ACHATINELLA. Shell ovate, dextral, rather ventricose, whorls convex, smooth, columella short, broadly appressed, aperture rather small; whitish, variously banded with brown.

PFEIFFER, Pro. Zool. Soc. 1846. p. 38.

Hab. Sandwich Islands.

About intermediate in its characters between the foregoing species and that which follows.

Species 8. (Mus. Cuming.)

ACHATINELLA BULIMOIDES. *Achat. testā ovatā, dextrorsā, ventricosā, solidiusculā, anfractibus convexis, levibus, supernē marginatis, columellā brevi, latissimē appressā, callosā; albidā, anfractuum parte inferiori castaneo-brunneā.*

THE BULIMUS-LIKE ACHATINELLA. Shell ovate, dextral, ventricose, rather solid, whorls convex, smooth, margined round the upper part, columella short, very broadly appressed, callous; whitish, lower part of the whorls chestnut-brown.

SWAINSON, Zool. Illus. 2nd Series, vol. ii. pl. 108. f. 1.

Hab. Sandwich Islands.

Larger and more ventricose than either of the preceding allied species, it differs more especially latter, which it most resembles in form, in whorls margined next the sutures.

•

•



10. a



11. a

ACHATINELLA.

PLATE II.

Species 9. (Mus. Cuming.)

ACHATINELLA VITTATA. *Achat. testâ dextrorsâ, globoso-conicâ, subventricosâ, anfractibus supernè sublatè marginatis, columellâ callosâ, vix dentatâ, labro subincrassato; albâ, lineis vittisque pallidè fuscescentibus cingulatâ, apice nigrâ.*

THE FILLETED ACHATINELLA. Shell dextral, globosely conical, rather ventricose, whorls rather broadly margined round the upper part, columella callous, scarcely toothed, lip rather thickened; white, encircled with lines and fillets of pale brown, black at the apex.

Hab. Sandwich Islands.

This approaches so closely to the sinistral species *A. decora* that it might readily be taken for a dextral variety. The whorls are more rounded and more distinctly margined beneath the sutures. The painting is very similar, but mostly darker next the sutures.

Species 10. (Fig. a and b. Mus. Cuming.)

ACHATINELLA LUGUBRIS. *Achat. testâ subacutè conicâ, dextrorsâ, basin versus ventricosâ, anfractibus supernè marginatis, columellâ brevi, callosâ, dentatâ, labro subincrassato; purpureo-nigrâ, apice albâ, vel albâ, nigro aut fusco fusciatâ et lineatâ.*

THE MOURNING ACHATINELLA. Shell rather sharply conical, dextral, ventricose towards the base, whorls margined round the upper part, columella short, callous, toothed, lip somewhat thickened; purple-black, white at the apex, or white, lineated and banded with brown or black.

Turbo lugubris, Chemnitz, Conch. Cab. vol. xi. p. 278. pl. 209. f. 2059, 2060.

Helix (Cochlogena) lugubris, Férussac.

Monodonta seminigra, Lamarck.

Bulimus seminiger, Menke.

Achatinella pica, Swainson.

Hab. Sandwich Islands.

Lamarck, mistaking this for a marine species, de it as a *Monodonta* from the shores of Tahiti, where natives use the shell for making necklaces. It is mainly distinguished by its sharply conical form.

Species 11. (Mus. Cuming.)

ACHATINELLA SUFFUSA. *Achat. testâ oblongo-ovatâ, sinistrorsâ, anfractibus convexis, subrudè obsolete striatis, columellâ contorto-plicatâ, aperturâ simplici; roseo-albicante, apice fusco-rubente, apertura fauce carneoroseâ.*

THE BLUSHING ACHATINELLA. Shell oblong-ovate, sinistral, whorls convex, somewhat rudely obsolete striated, columella with a twisted plait, aperture simple; pinkish-white, brown-red at the apex, interior of the aperture flesh-pink.

Hab. — ?

A delicately coloured species, partaking very much of the character of *Bulimus*, the whorls being less smoothly polished than usual and not margined at the sutures. It resembles *A. rosea* in general aspect, but is a different kind of shell.

Species 12. (Fig. a and b. Mus. Cuming.)

ACHATINELLA DECORA. *Achat. testâ globoso-conicâ, ventricosâ, sinistrorsâ, columellâ brevi, latâ, plano-callosâ, labro subincrassato; albâ, fasciis lineisque castaneis et nigris variè pictâ, columellâ labroque purpurascente tinctis.*

THE HANDSOME ACHATINELLA. Shell globosely conical, ventricose, sinistral, columella short, broad, flatly callous, lip somewhat thickened; white, variously banded with chestnut and black bands and lines, lip and columella stained with light purple.

FÉRUSAC, Hist. Moll. pl. 155. f. 5 and 7.

Achatinella vestita, Mighels.

Hab. Sandwich Islands.

Distinguished by its globose ventricose growth, striped painting, and light purple colouring of the lip and columella. FÉRUSAC's Fig. 6 represents a distinct species, *A. perversa*, Swainson.

Species 13. (Mus. Cuming.)

ACHATINELLA PRODUCTA. *Achat. testâ subelongulo-conicâ, dextrorsâ, anfractibus convexis, ad suturas leviter marginatis, columellâ conspicuè calloso-dentulatâ, aperturâ parviusculâ; olivaceo-viridi, apice, columellâ, et apertura fauce albis.*

THE PROLONGED ACHATINELLA. Shell somewhat elongately conical, dextral, whorls convex, slightly mar-

gined at the sutures, columella conspicuously callos-toothed, apex rather small; olive-green, apex, columella, and interior of the aperture white.

Hab. Sandwich Islands.

Chiefly distinguished by its elongately conical form, and light olive-green colouring.

Species 14. (Mus. Cuming.)

ACHATINELLA PERVERSA. *Achat. testā globoso-conicā, sinistrorsā, apicem versus subacuminatā, columellā callosā, plano-dentatā, labro subincrassato; olivaceo-fuscā, lineis viridi-nigricantibus spiralibus et obliquis subregulariter decussatā, supra et infra suturas opaco-albā.*

THE REVERSED ACHATINELLA. Shell globosely conical, sinistral, rather acuminate towards the apex, columella callous, flatly toothed, lip somewhat thickened; olive-brown, rather irregularly decussated with spiral and oblique greenish-black lines, opaque-white above and below the sutures.

SWAINSON, Zool. Illus. Second Series, pl. 99. f. 2.

Turbo lugubris sinistrorsus, Chemnitz.

A. decora, var. Pfeiffer.

Hab. Sandwich Islands.

The opaque white sutures are very characteristic in this species, and it has moreover a peculiar cross-lined style of painting. De Férussac figured it with *A. decora*, and Dr. Pfeiffer quotes it as a variety of that species.

Species 15. (Mus. Cuming.)

ACHATINELLA SIMULANS. *Achat. testā globoso-conicā, sinistrorsā, apicem versus acutā, anfractibus supernè conspicuè marginatis, columellā brevī, plano-callosā; albā, lineis perpaucis fuscescentibus cingulatā, fasciā*

intensè fuscā circa columellam, columellā labroque pallidè purpurascenscentibus.

THE ALLIED ACHATINELLA. Shell globosely conical, sinistral, sharp towards the apex, whorls conspicuously margined at the sutures, columella short, flatly callous; white, encircled with a very few light brown lines, with an intense brown band around the columella, lip and columella tinged with light purple.

Hab. — ?

The colouring of this species is so like that of *A. decora*, that it might be taken for a variety; yet it differs in form, the spire being more acuminate, and the last whorl not so broad and ventricose.

Species 16. (Mus. Cuming.)

ACHATINELLA SPIRIZONA. *Achat. testā elongato-conicā, dextrorsā, subumbilicatā, anfractibus septem ad octo, convexis, obliquè plicato-striatis, striis ad suturas subrudibus, columellā contorto-plicatā, aperturā parviusculā; intensè brunneā, zonā albā infra suturas, epidermide tenui fuscescente indutā.*

THE SPIRAL-ZONED ACHATINELLA. Shell elongately conical, dextral, slightly umbilicated, whorls seven to eight in number, convex, obliquely plicately striated, striae somewhat rude at the sutures, columella with a twisted plait, aperture rather small; intense brown, with a white zone beneath the sutures, covered with a thin brownish epidermis.

FÉRUSAC, Hist. Moll. pl. 155. f. 14, 15.

Achatinella acuta, Swainson.

Hab. Oahu, Sandwich Islands.

This and *A. turritella* represent an abnormal form of the genus, differing from the type in having more whorls and in not possessing a similarly polished painted exterior.

8

9



18



19



21. b.



23. b.



24.

ACHATINELLA.

PLATE III.

Species 17. (Mus. Cuming.)

ACHATINELLA BELLA. *Achat. testâ conicâ, dextrorsâ, anfractibus subcentricosis, columellâ contorto-plicatâ; olivaceo-luteâ, suturis nigro-fuscis, deinde albifasciatâ, anfractu ultimo infernè fusco et albo fasciato.*

THE PRETTY ACHATINELLA. Shell conical, dextral, whorls rather centricose, columella with a twisted plait; olive-yellow, sutures black-brown, then white-banded, last whorl brown and white-banded.

Hab. Motokai, Sandwich Islands.

Mr. Cuming possesses several specimens of this pretty species of immature growth. The dark sutural band is sometimes absent in the last whorl, but the white band appears constant.

Species 18. (Mus. Cuming.)

ACHATINELLA COLORATA. *Achat. testâ oblongo-conicâ, dextrorsâ, anfractibus plano-convexis, columellâ contorto-plicatâ, aperturâ parvâ; luteâ, viridi latifasciatâ, suturis nigro-fuscis, columellâ pallidè rosaceâ.*

THE COLOURED ACHATINELLA. Shell oblong-conical, dextral, whorls flatly convex, columella with a twisted plait, aperture small; yellow, encircled with a very broad green band, sutures black-brown, columella light pink.

Hab. Sandwich Islands.

Characterized, like *A. pulcherrima*, by a dark sutural line within the suture, but of a less elongated form. The ground-colour is a bright yellow, and each whorl is painted with a broad bright green band.

Species 19. (Mus. Cuming.)

ACHATINELLA ABBREVIATA. *Achat. testâ ovali, subventricosâ, dextrorsâ, anfractibus convexis, supernè marginatis, spirâ breviusculâ, apice obtusâ, columellâ callosâ, contortâ; olivaceo-luteâ, lineâ nigro-fusâ ad suturas, anfractuum parte inferiori nigricante-viridi.*

THE SHORTENED ACHATINELLA. Shell ovate, somewhat ventricose, dextral, whorls convex, margined round the upper part, spire rather short, obtuse at the apex, columella callous, twisted; olive-yellow, with a black-brown line at the sutures, lower part of the last whorl very dark green, apex black.

Hab. . ?

The form of this species is again distinct from either of the preceding.

Species 20. (Mus. Cuming.)

ACHATINELLA OLIVACEA. *Achat. testâ oblongo-conicâ, sinistrorsâ, anfractibus convexis, supernè tenuimarginatis, columellâ contorto-plicatâ; intensè viridi-olivaceâ, lineis fuscescentibus subobscurè cingulatâ, columellâ et aperturâ fauce albis.*

THE OLIVE ACHATINELLA. Shell oblong-conical, sinistral, whorls convex, thinly margined round the upper part, columella with a twisted plait; dark green-olive, encircled with rather obscure brownish lines, columella and interior of the aperture white.

Hab. — ?

The rich dark olive colouring of this species leaves off suddenly in an abrupt line at the aperture, and the remainder of the body-whorl is of an orange-fawn tint, like a shell denuded to that extent of epidermis.

Species 21. (Mus. Cuming.)

ACHATINELLA MUSTELINÂ. *Achat. testâ aut sinistrorsâ aut dextrorsâ, acuminato-conicâ, anfractibus subrotundatis, supernè marginatis, columellâ callosâ, subappressâ, aperturâ subauriculatâ, labro incrassato; fusco-cinereâ, suturis et apice albis.*

THE TAWNY ACHATINELLA. Shell acuminate conical, whorls somewhat rounded, margined round the upper part, columella callous, rather appressed, aperture slightly auriculated, lip thickened; brownish ash, sutures and apex white.

MIGHELS, *Pro. Boston Nat. Hist. Soc.* 1845, p. 21.

Hab. Waianai, Sandwich Islands.

Distinguished by its acuminate form and subauriculate aperture, whilst the colouring is peculiar.

I cannot agree with Dr. Pfeiffer, in regarding this and *A. Bulimoides* as varieties of *A. lorata*. On referring to De Férussac's and Swainson's figures of these species, which I have identified with specimens in Mr. Cuming's collection, it will be found that all three are distinct from each other, in form, substance, and arrangement of colours.

Species 22. (Mus. Cuming.)

ACHATINELLA BILINEATA. *Achat. testâ oblongo-conicâ, dextrorsâ, basin versus subventricosâ, anfractibus rotundatis, columellâ dentato-plicatâ; vivide luteâ, lineis duabus nigris approximatis medio conspicuè cingulatâ.*

THE TWO-LINED ACHATINELLA. Shell oblong-conical, dextral, rather ventricose towards the base, whorls rounded, columella dentately plicate; bright yellow, conspicuously encircled round the middle with two close black lines.

Hab. — ?

The form of this shell is peculiar, and there is something equally characteristic in the marking.

Species 23. (Mus. Cuming.)

ACHATINELLA PULCHERRIMA. *Achat. testâ subelongato-conicâ, dextrorsâ, anfractibus convexis, supernè tenuimarginatis, columellâ brevi, callosâ; luteâ, fasciis latiusculis nigris plerumque cingulatâ, suturis semper nigris.*

THE VERY BEAUTIFUL ACHATINELLA. Shell somewhat elongately conical, dextral, whorls convex, thinly margined round the upper part, columella short, callous; yellow, mostly encircled with rather broad black bands, sutures always black.

SWAINSON, Brand's Journal, 1828, p. 85. Zool. Illus.
• 2nd series, pl. 123. f. 2.

Achatinella Byronii, Gray.

Hab. Sandwich Islands.

Although the black sutural line is striking and constant, the character is by no means confined to this species. Two or three have been confounded together in collections under this apprehension.

Species 24. (Mus. Cuming.)

ACHATINELLA CASTANEA. *Achat. testâ oblongo-conicâ, sinistrorsâ, apice subobtusâ, anfractibus convexis, supernè tenuimarginatis, columellâ dentato-plicatâ; utrolato-luteâ, anfractibus ultimi dimidio inferiori vivide castaneo, interdum undique castaneâ, columellâ et aperturæ fauce albis.*

THE CHESTNUT ACHATINELLA. Shell oblong-conical, sinistral, rather obtuse at the apex, whorls convex, thinly margined round the upper part, columella dentately plicate; burnt yellow, lower half of the last whorl bright chestnut, sometimes chestnut throughout, columella and interior of the aperture white.

Hab. Sandwich Islands.

The colouring of this species always partakes more or less of rich bright chestnut.





25.



26.



27.



28 a.



29 a.



29 b.



30.



31.

ACHATINELLA.

PLATE IV.

Species 25. (Mus. Cuming.)

ACHATINELLA VIRIDANS. *Achat. testā ovato-conicā, dextrorsā, anfractibus convexis, columellā brevi, dentato-plicatā; cinereo-viridi aut virescente, lineis obliquis suturatoribus promiscuē notatā, fasciā albā latā infra suturas cingulatā, columellā albā.*

THE GREENISH ACHATINELLA. Shell ovately conical, dextral, whorls convex, columella short, dentately plicate; ash-green or pale green, promiscuously marked with oblique darker lines, encircled with a broad white band beneath the sutures, columella white.

MIGHELS, Pro. Boston Nat. Hist. Soc. 1845, p. 20.

Hab. Sandwich Islands.

A light green or ash-green shell, without bands or marking, encircled by a broad white band beneath the sutures.

Species 26. (Mus. Cuming.)

ACHATINELLA STEWARTI. *Achat. testā subelongato-conicā, sinistrorsā, anfractibus plano-convexis, columellā contorto-plicatā, aperturā parviusculā, labro simplici; olivaceo-luteā, fasciā suturali nigrā.*

STEWART'S ACHATINELLA. Shell somewhat elongately conical, sinistral, whorls flatly convex, columella with a twisted plait, aperture rather small, lip simple; olive-yellow, with a black sutural band.

GREEN, Contributions to the MacLurian Lyceum of Philadelphia, 1827, Part 2. p. 47. pl. 4. f. 1 to 4.

Hab. Oahu, Sandwich Islands.

This species, which I consider to be distinct from *A. vulpina*, is described by Professor Green as inhabiting the deep valleys of Oahu, at all seasons, adhering to the under surface of the large leaves of a plant called 'Ti, from the roots of which the natives brew an intoxicating liquor. The favourite mode of preparing them for food, is to tie up large numbers in the Ti leaves and bake them with heated stones.

Species 27. (Mus. Cuming.)

ACHATINELLA PRASINUS. *Achat. testā oblongo-conicā, sinistrorsā, anfractibus convexis, obliquē subrudē impresso-striatis, columellā brevi, contorto-plicatā; in-*

tensē viridi, lineis nigricantibus obscure cingulatā, apice albā, columellā albā.

THE DARK-GREEN ACHATINELLA. Shell oblong-conical, sinistral, whorls convex, obliquely somewhat rudely impressly striated, columella short, twisted-plaited; very dark green, encircled with obscure dark lines, white at the apex, columella white.

Hab. — ?

There is a slight peculiarity of form, and a very distinct arrangement of colours in this species.

Species 28. (Mus. Cuming.)

ACHATINELLA ROSEA. *Achat. testā oratā, solidiusculā, ventricosā, sinistrorsā, anfractibus convexis, laceribus, supernē marginatis, columellā callosā, contorto-plicatā, aperturā labro subincrassato; albidā, basin versus et in sulco suturali carneo-rosaceo tinctā, columellā labroque purpurascente-roseis.*

THE ROSE ACHATINELLA. Shell ovate, rather solid, ventricose, sinistral, whorls convex, smooth, margined round the upper part, columella callous, twisted-plaited, lip of the aperture rather thickened; whitish, tinged with flesh-pink towards the base and in the sutural groove, lip and columella purple-rose.

SWAINSON, Brand's Journal, 1828, p. 85. Zool. Illus. 2nd Series, pl. 123. f. 1.

Hab. Sandwich Islands; Rev. A. Bloxam.

At the time Mr. Swainson described this species, he entertained a doubt of its being a variety of *B. Bulimoides*. It will be found to differ in form, and the colouring is materially different.

Species 29. (Fig. a, b, c. Mus. Cuming.)

ACHATINELLA VULPINA. *Achat. testā acuminato-oblongā, sinistrorsā, interdum subventricosā, anfractibus subplano-convexis, columellā brevi, callosā, dentato-plicatā, aperturā labro porum incrassato; olivaceā aut albicante, strigis obliquis rufo-fuscescentibus, lineis fascisque spiralibus nigris aut viridibus aut fuscis variē pictā, columellā purpurascente-roseā.*

THE SUBTLE ACHATINELLA. Shell acuminately oblong, sinistral, sometimes rather ventricose, whorls somewhat flatly convex, columella short, callous, dentately

plicate, lip of the aperture but little thickened; olive or whitish, with oblique light red-brown streaks, variously painted with spiral black or green or brown bands and lines, columella purple-rose.

FÉRUSSAC, Hist. Moll. pl. 155. f. 1.

Hab. Sandwich Islands.

The colouring of this species is extremely variable; there is, however, but one prevailing idea in its manner of distribution. The columella is of a livid purple-rose in all the varieties. I consider *A. Stewartii*, Green, to be a distinct species, notwithstanding that it resembles this in the colour of the columella; and *A. livida*, Swainson, whose figure is only a magnified representation of an immature shell, cannot be referred to it without considerable doubt.

Species 30. (Mus. Cuming.)

ACHATINELLA ADUSTA. *Achat. testā acuminato-oblongā, subturritā, sinistrorsā, anfractibus rotundatis, columellā brevi, callosā, dentatā; intensè castaneā, basi nigricante, fasciā spirali nigrā infra suturas, columellā rosaceā.*

THE SCORCHED ACHATINELLA. Shell acuminate oblong, somewhat turreted, sinistral, whorls rounded, columella short, callous, toothed; dark chestnut, darker towards the base, with a spiral black band beneath the sutures, columella pinkish.

Hab. -

The general colouring of this species, which is allied to *A. vulpina* and *Stewartii*, is similar to *A. castanea*, in which the black sutural band is wanting, and in which the columella is particularly white.

Species 31. (Mus. Cuming.)

ACHATINELLA VENTULUS. *Achat. testā oblongo-cylindraceā, dextrorsā, anfractibus plano-convexis, subtilissimè impresso-striatis, ad suturas leviter crenulatis, columellā brevi, arcuatā, tenue contorto-plicatā, aperturā parvā; intensè brunneā, fasciā pallidā infra suturas et circa columellam, epidermide tenui indutā, apertura fauce cærulescente.*

THE SLIGHTLY-INFLATED ACHATINELLA. Shell oblong-cylindrical, dextral, whorls flatly convex, very finely impressly striated, slightly crenulated at the sutures, columella short, arched, thinly twisted-plaited, aperture small; very dark brown, with a pale band beneath the sutures and around the columella, covered with a slight epidermis, interior of the aperture bluish.

Helix (Cochlogena) ventulus, Férussac, Prodrôme, no. 437.

Achatinella microstoma, Gould (fide Pfeiffer).

Hab. Oahu, Sandwich Islands; Hinds.

A dark cylindrical sub-horny shell with a slight fugacious epidermis.



32.



34.



37.



36.



38.



39.



40.



41.

ACHATINELLA.

PLATE V.

Species 32. (Mus. Cuming.)

ACHATINELLA VENUSTA. *Achat. testâ elongato-conicâ, sinistrorsâ, spirâ acuminatâ, apice obtusâ, anfractibus rotundatis, striatulis, columellâ valdè contortâ et plicatâ, aperturâ parvâ; luteâ, maculis flammisque nigris conspicuè pictâ, apice purpureo-fusco.*

THE HANDSOME ACHATINELLA. Shell elongately conical, sinistral, spire acuminate, obtuse at the apex, whorls rounded, finely striated, columella much twisted and plaited, aperture small; yellow, conspicuously painted with black spots and flames, apex purple-brown.

MIGHELS, Pro. Boston Nat. Hist. Soc. 1845, p. 21.

Hab. Oahu, Sandwich Islands.

Distinguished from *A. picta*, to which it is the nearest allied species, by its more elongated form and bright yellow ground-colouring.

Species 33. (Mus. Cuming.)

ACHATINELLA CITRINA. *Achat. testâ elongato-conicâ, sinistrorsâ, spirâ subacuminatâ, anfractibus rotundatis, striatulis, ultimo obsolete carinulato, columellâ valdè contortâ, biplicatâ, aperturâ parviusculâ; vividè citrinâ.*

THE CITRON ACHATINELLA. Shell elongately conical, sinistral, spire somewhat acuminate, whorls rounded, finely striated, the last finely obsoletely keeled, columella much twisted, two-plaited, aperture rather small; bright citron yellow.

MIGHELS, MS.

Hab. Sandwich Islands.

This has all the appearance of an unspotted variety of the preceding species, but it will be found to differ in form upon a careful comparison. It does not agree with Férussac's figure, Hist. Moll. pl. 155. f. 12. *Helix (Cochlogena) luteola*, representing an immature shell which I have not been able correctly to identify.

Species 34. (Fig. 34 and 41. Mus. Cuming.)

ACHATINELLA TURRITELLA. *Achat. testâ elongato-conicâ, subpyramidalî, anfractibus septem, planiconvexis, obliquè rudè striatis, ad suturas subcrenulatis, aperturâ parvâ, columellâ biplicatâ, appressâ; intensè castaneâ, fasciâ albidâ infra suturas.*

THE LITTLE TURRET ACHATINELLA. Shell elongately conical, somewhat pyramidal, whorls seven in number, flatly convex, obliquely rudely striated, slightly crenulated at the sutures, aperture small, columella two-plaited, appressed; dark chestnut, with a whitish band beneath the sutures.

FERUSSAC, Hist. Moll. pl. 155. f. 13.

Achatinella Oahuensis, Green.

Achatinella inornata, Mighels.

Hab. Oahu, Sandwich Islands.

This species represents the most elongately turreted form of the genus.

Species 35. (Mus. Cuming.)

ACHATINELLA RADIATA. *Achat. testâ ovatâ, solidatâ, dextrorsâ, anfractibus convexis, obliquè striatis, supernè subobscurè marginatis, columellâ brevi, plicato-contortâ, latè appressâ, labro subincrassato; luteo-albidâ, strigis lineisque intensè viridibus et nigris densissimè obliquè pictâ, columellâ labroque carneo-roseis.*

THE RAYED ACHATINELLA. Shell ovate, rather solid, dextral, whorls convex, obliquely striated, somewhat obscurely margined round the upper part, columella short, plicately twisted, broadly appressed, lip rather thickened; yellowish-white, obliquely very thickly painted with dark green and black streaks and lines, lip and columella flesh-pink.

PFEIFFER, Pro. Zool. Soc. 1845, p. 89.

Hab. Oahu, Sandwich Islands.

A very characteristic richly painted species, quite distinct from *A. viridana*.

Species 36. (Mus. Cuming.)

ACHATINELLA PICTA. *Achat. testâ acuminato-ovatâ, sinistrorsâ, anfractibus rotundatis, tumidiusculis, columellâ arcuatâ, valdè contorto-plicatâ; lutescente, maculis flammisque nigris undique pictâ, columellâ et aperturâ margine intus livido-carneis.*

THE PAINTED ACHATINELLA. Shell acuminately ovate, sinistral, whorls rounded, rather swollen, columella arched, very much twisted-plaited; yellowish, painted throughout with black spots and flames, columella

and edge of the aperture stained within with livid flesh-colour.

MIGHELS, Pro. Boston Nat. Hist. Soc. 1845, p. 90.

Hab. Oahu, Sandwich Islands.

The elegant zigzag painting of this species is very similar to that of *A. venusta*.

Species 37. (Mus. Cuming.)

ACHATINELLA TRISTIS. *Achat. testâ globoso-ovatâ, subcylindraceâ, solidiusculâ, dextrorsâ, spirâ brevi, apice acutâ, anfractibus convexis, corrugato-striatis, columellâ arcuatâ, contorto-plicatâ; flavicante-lacteâ aut fuscescente, epidermide nigrâ fugaci indutâ, apice fusco-rubente.*

THE SAD ACHATINELLA. Shell globosely ovate, somewhat cylindrical, rather solid, dextral, spire short, acute at the apex, whorls convex, corrugately striated, columella arched, with a twisted plait; yellowish cream-colour or brownish, covered with a black fugacious epidermis, apex brown-red.

Helix (Cochlogena) tristis, Férussac, Prodrôme, no. 435.

Achatinella fuliginosa, Gould.

Hab. Sandwich Islands.

This and the following species belong to the same peculiar type as *A. ventulus* of the preceding plate.

Species 38. (Mus. Cuming.)

ACHATINELLA STRAMINEA. *Achat. testâ acuminato-oblongâ, sinistrorsâ, anfractibus convexis, obliquè striatis, columellâ fortiter contorto-plicatâ; stramineâ, immaculatâ.*

THE STRAW-COLOURED ACHATINELLA. Shell acuminately oblong, sinistral, whorls convex, obliquely striated, columella strongly twisted-plaited; straw-coloured, unspotted.

Hab. Sandwich Islands.

This species is of a peculiar light straw-colour, and differs essentially in form from any of the preceding.

Species 39. (Mus. Cuming.)

ACHATINELLA NUCLEOLA. *Achat. testâ abbreviato-ovalâ, subglobosâ, dextrorsâ, spirâ breviusculâ, anfractibus convexis, subtiliter striatis, ad suturas crenulatis, columellâ arcuatâ, contorto-plicatâ; rubente-castaneâ.*

THE KERNEL ACHATINELLA. Shell shortly ovate, somewhat globose, dextral, spire rather short, whorls convex, finely striated, crenulated at the sutures, columella arched, with a twisted plait; reddish-chestnut.

GOULD, Pro. Boston Nat. Hist. Soc. 1845, p. 28.

Achatinella brevis, Pfeiffer.

Hab. Sandwich Islands.

Very closely allied to *A. ventulus*, but sufficiently distinguished by its more globose form, lighter red-brown colour, and more prominent abruptly truncated columella.

Species 40. (Mus. Cuming.)

ACHATINELLA MIGHELSIANA. *Achat. testâ acuminato-conicâ, dextrorsâ, anfractibus rotundatis, supernè obsolete marginatis, columellâ valdè contorto-plicatâ; opaco-albâ, lineis cinereis obscure notatâ, anfractu ultimo lineâ angustâ nigro-fusâ cingulato, columellâ et aperture margine intus nigro-fusco tinctis.*

MIGHEL'S ACHATINELLA. Shell acuminately conical, dextral, whorls rounded, obsoletely margined round the upper part, columella strongly twisted-plaited; opaque-white, faintly marked with ash lines, last whorl encircled with a narrow black-brown line, columella and edge of the aperture stained within with black-brown.

PFEIFFER, Pro. Zool. Soc. 1847, p. 231.

Hab. Molokai, Sandwich Islands.

Each example of this species in Mr. Cuming's collection is encircled round the lower part of the whorls by a dark line, which is concealed in all but the last, by the convolution of one whorl upon the other.

Fig. 41. (Mus. Cuming.)

ACHATINELLA TURBITELLA. Already described in this plate. For Sp. 41 see Pl. VI.



41.



42. a.



43. a.



43. b.



42. b.



44. a.



44. b.



ACHATINELLA.

PLATE VI.

Species 4. (Mus. Cuming.)

ACHATINELLA CORNEOLA. *Achat. testā oblongo-conicā, anfractibus septem ad octo, convexis, subtiliter concentricè impresso-striatis, columellā profundè arcuatā, margine productā et contortā; subpellucido-corneā.*

THE HORNY ACHATINELLA. Shell oblong-conical, whorls seven to eight in number, convex, finely concentrically impressly striated, columella deeply arched, produced and twisted at the edge; subtransparent horny.

PFEIFFER, Pro. Zool. Soc. 1845, p. 90.

Hab. Sandwich Islands.

Notwithstanding the marginal plait-structure of the columella, this and the two following species are very distinct from the true *Achatinellæ*. They belong rather to the small horny group of *Achatinæ*, among which I have already described some allied forms.

Species 5. (Mus. Cuming.)

ACHATINELLA CLARA. *Achat. testā pyramidal-conicā, anfractibus octo, convexis, subangustis, concentricè impresso-striatis, columellā breviusculā, contortā, aperturā parvā; pellucido-corneā, anfractuum margine juxta suturas rufilineato.*

THE CLEAR ACHATINELLA. Shell pyramidally conical, whorls eight in number, convex, rather narrow, concentrically impressly striated, columella rather short, twisted, aperture small; transparent horny, edge of whorls next the sutures marked with a red line.

PFEIFFER, Pro. Zool. Soc. 1845, p. 90.

Achatinella striatula, Gould.

Hab. Sandwich Islands.

Distinguished from the preceding species by its narrower turreted form, and less prominent columellar plait.

Species 41. (Mus. Cuming.)

ACHATINELLA PYRAMIS. *Achat. testā acuminato-conicā, anfractibus octo, planiconvexis, supernè tenuimarginatis, obliquè minutè striatis, columellā brevi, arcuatā, aperturā parviusculā; virescente-corneā.*

THE PYRAMID ACHATINELLA. Shell acuminate conical, whorls eight in number, flatly convex, finely margined round the upper part, obliquely minutely

striated, columella short, arched; aperture rather small; greenish horn.

PFEIFFER, Pro. Zool. Soc. 1845, p. 90.

Hab. —?

Distinguished by its more acuminate conical form.

Species 42. (Fig. a, b, Mus. Cuming.)

ACHATINELLA RUBENS. *Achat. testā acuminato-oblongā, dextrorsā, solidiusculā, anfractibus septem, planiconvexis, levigatis, vel obliquè subirregulariter striatis, columellā plicato-contortā, aperturā parviusculā; rubento-lactea, apice fuscā, epidermide fuscā fugaci indutā, aperturæ sauce plerumquè roseā.*

THE RUDDY ACHATINELLA. Shell acuminate oblong, dextral, rather solid, whorls seven in number, flatly convex, smooth, or obliquely somewhat irregularly striated, columella plicately twisted, aperture rather small; ruddy cream-colour, brown at the apex, covered with a brown fugacious epidermis, interior of the aperture mostly tinged with rose.

GOULD, Pro. Boston Soc. Nat. Hist. 1845, p. 27.

Hab. Sandwich Islands.

The shells here represented vary materially in form, but are doubtless different states of the same species.

Species 43. (Mus. Cuming.)

ACHATINELLA PERDIX. *Achat. testā ovalā, ventricosā, tenuiculā, dextrorsā, spirā exsertā, apice subobtusā, anfractibus sex, convexis, supernè marginalis, lineis impressis flexuosis obliquè sculptā, columellā plicato-contortā, subcallosā; albidā, olivaceo-fusco undique pictā et variegatā, suturis et columellā albis.*

THE PARTRIDGE ACHATINELLA. Shell ovate, ventricose, rather thin, dextral, spire exserted, somewhat obtuse at the apex, whorls six in number, convex, margined round the upper part, obliquely sculptured with flexuous impressed lines, columella plicately twisted, rather callous; whitish, painted and variegated throughout with olive-brown, sutures and columella white.

Hab. —?

This is a remarkable species, of a different type from

any other of the genus, compounded of *Bulimus* and *Achatinella*. With the generic callous twisted-plait columella of the latter genus, the shell is characterized by the form, substance, and design of colouring of the former.

Species 44. (Mus. Cuming.)

ACHATINELLA Plicata. *Achat. testā acuminato-turritā, gracili, tenuiculā, sinistrorsā, anfractibus sex, convexis, carinis spiralibus numerosis acutis undique sculptis, suturis subexcavatis, columellā callosā, plicā obsoletā, aperturā parvā, labro simplici; fuscescente-albā, ad apicem obscure fulguratā.*

THE Plicate ACHATINELLA. Shell acuminately turreted, slender, rather thin, sinistral, whorls six in number, convex, sculptured throughout with numerous sharp spiral keels, sutures rather excavated, columella callous, plait obsolete, aperture small, lip simple; brownish-white, obscurely waved at the apex.

MICHELIS, MS. Pfeiffer, *Mon. Helic. viv.* vol. ii. p. 235. *Hab.* Moko Kai, Sandwich Islands.

This also is of a different type from any of the pre-

ceding species, and one of very abnormal character. It is the only form that presents any external raised sculpture, and the plicate columella by which the genus is chiefly characterized is almost obsolete.

Species 45. (Mus. Cuming.)

ACHATINELLA Bacca. *Achat. testā abbreviato-conicā, dextrorsā, subventricosā, anfractibus convexis, supernè marginatis, columellā plicato-contortā; intense nigricante-castaneā, suturis flavidis, columellā pallidè rosaceā.*

THE BERRY ACHATINELLA. Shell abbreviately conical, dextral, rather ventricose, whorls convex, margined round the upper part, columella plicately twisted; very dark chestnut, sutures yellowish, columella pinkish.

Hab. — ?

The shell here described does not appear to have reached maturity, but, allowing for this, it is still characterized by a much wider and shorter plan of convolution than any of the species which have preceded it.

ACHATINELLA.

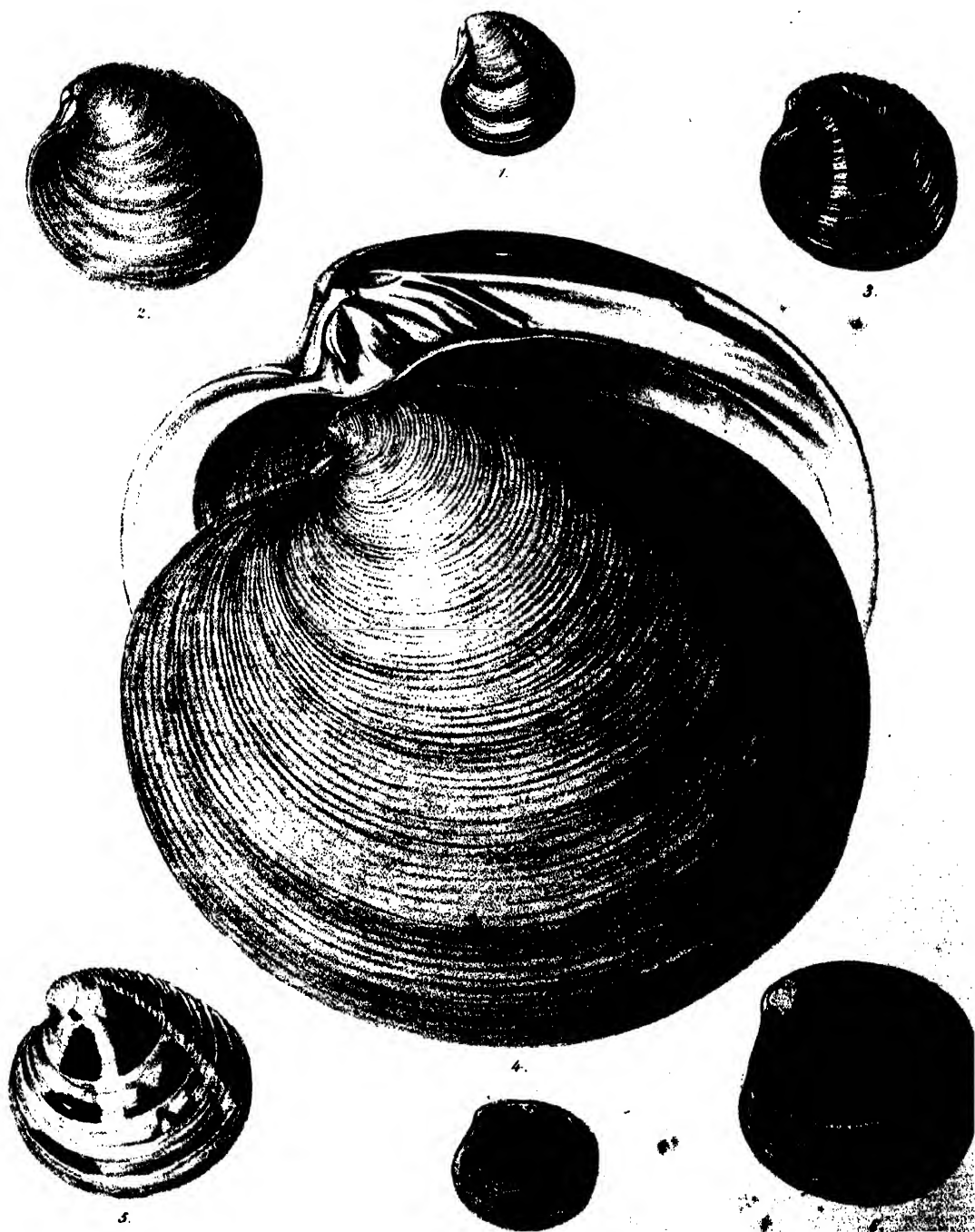
	Plate.	Species.		Plate.	Species.
<i>abbreviata</i> , Reeve	III.	19	<i>perversa</i> , Swainson	II.	14
<i>acuta</i> , Swainson	II.	16	<i>pica</i> , Swainson	II.	10
<i>adusta</i> , Reeve	IV.	30	<i>picta</i> , <i>Mighels</i>	V.	36
<i>barca</i> , Reeve	VI.	45	<i>plicata</i> , <i>Mighels</i>	VI.	44
<i>bella</i> , Reeve	III.	17	<i>prasinus</i> , Reeve	IV.	27
<i>bilineata</i> , Reeve	III.	22	<i>producta</i> , Reeve	II.	13
<i>brevis</i> , Pfeiffer	V.	39	<i>pulcherrima</i> , Swainson	III.	23
<i>Byronii</i> , Gray	III.	23	<i>pyramis</i> , Pfeiffer	VI.	41
<i>Bulinoides</i> , Swainson	I.	8	<i>radiata</i> , Pfeiffer	V.	35
<i>castanea</i> , Reeve	III.	24	<i>Rhohri</i> , Pfeiffer	I.	3
<i>citrina</i> , <i>Mighels</i>	V.	33	<i>rosea</i> , Swainson	IV.	28
<i>clara</i> , Pfeiffer	VI.	5	<i>rubens</i> , Gould	VI.	42
<i>colorata</i> , Reeve	III.	18	<i>simulans</i> , Reeve	II.	15
<i>cornicola</i> , Pfeiffer	VI.	4	<i>spirazona</i> (<i>Helix</i>), Férussac	II.	16
<i>decora</i> (<i>Helix</i>), Férussac	II.	12	<i>Stewarti</i> , Green	IV.	26
<i>fuliginosa</i> , Gould	V.	37	<i>straminea</i> , Reeve	V.	38
<i>Greenii</i> , Gray	IV.	28	<i>striatula</i> , Gould	VI.	5
<i>inornata</i> , <i>Mighels</i>	V.	34	<i>suffusa</i> , Reeve	II.	11
<i>lorata</i> (<i>Helix</i>), Férussac	I.	6	<i>tæniolata</i> , Pfeiffer	I.	7
<i>lugubris</i> (<i>Turbo</i>), Chemn.	II.	10	<i>tristis</i> (<i>Helix</i>), Férussac	V.	37
<i>microstoma</i> , Gould	IV.	31	<i>turritella</i> (<i>Helix</i>), Férussac	V.	34
<i>Mighelsiana</i> , Pfeiffer	V.	40	<i>ventulus</i> (<i>Helix</i>), Férussac	IV.	31
<i>mustelina</i> , <i>Mighels</i>	III.	21	<i>venusta</i> , <i>Mighels</i>	V.	32
<i>nubilosa</i> , <i>Mighels</i>	I.	1	<i>vestita</i> , <i>Mighels</i>	II.	12
<i>nucleola</i> , Gould	V.	39	<i>virgulata</i> (<i>Partula</i>), <i>Mighels</i>	I.	3
<i>Oahuensis</i> , Green	V.	34	<i>viridans</i> , <i>Mighels</i>	IV.	25
<i>olivacea</i> , Reeve	III.	20	<i>vittata</i> , Reeve	II.	9
<i>pallida</i> , Nuttall	I.	2	<i>vulpina</i> (<i>Helix</i>), Férussac	IV.	29
<i>perdix</i> , Reeve	VI.	43			

MONOGRAPH

OF THE GENUS,

A R T E M I S.

"Maiden Sylph; oh, hear my prayer!
Let the lowly earth-born see
Something of thy mystery,"—*Hunt*.



ARTEMIS.

PLATE I.

Genus ARTEMIS, Poli.

Testa plus minus orbicularis, æquivalvis, inæquilateralis, concentricè striata aut lirata, rarè lævis, liris interdum ad latera laminatis, præcipuè ad latus posticum, areâ ligamenti interdum simplici, plerumque plus minus excavatâ, latere antico plerumque lunulato, lunulâ impressâ. Cardo fortis, dentibus tribus divergentibus in valvâ alterâ, in alterâ quatuor, ligamento subexterno. Impressiones musculares oblongæ, subæquales; pallii sinis impressio conspicuè lanceolato-trigona, subprofunda. Testa plerumque albida.

Shell more or less orbicular, equivalve, inequilateral, concentrically striated or ridged, rarely smooth, ridges sometimes laminated at the sides, especially at the posterior side, area of the ligament sometimes simple, generally more or less excavated, anterior side mostly impressly lunuled. Hinge strong, with three diverging teeth in one valve and four in the other, ligament subexternal. Muscular impressions oblong, nearly equal; impression of the sinus of the mantle conspicuously lanceolately triangular, rather deep. Shell mostly whitish.

The genus *Artemis* was introduced more than half a century ago, upon anatomical grounds, by Poli. The few species known to Linnæus, Chemnitz, and their contemporaries, were included under *Venus*, whilst Lamarck, regardless of the views of the Neapolitan malacologist, referred them to his genus *Cytherea*. *Artemis* differs from both of these genera in the form of the foot, in the siphons being united to their extremities, and in the mantle having a lanceolately triangular sinus, which is impressed in a very characteristic manner upon the interior of each valve of the shell. The peculiarities observable in the shell, in addition to that of the pallial sinus, are its orbicular, compressed form, its uniform concentric sculpture, and the general absence of colour and pattern. The shell rarely presents the polished smoothness or colouring of *Cytherea*, few species being so highly painted as the European *A. exoleta* and its exotic analogue, *A. variegata*; neither has it the festooned or serrated varieties of sculpture so frequently presented in *Venus*. There is little variety in the general aspect of the *Artemides*, but they are well distinguished from each other in detail.

The geographical position of the genus is mainly in the eastern hemisphere. Of sixty-one species described in this monograph, the localities of forty-six are known as follows:—three inhabit the shores of Europe; five are from Korea, Japan, and China; eleven from the Philippines; two from the Moluccas, seven from Australia, and two from New Zealand; six from North Africa, none being found on the shores of this continent below the equator; and seven only from America.

The genus comprises about seven principal typical forms of species, each of which affects a different locality. *A. concentrica* and its congeners, the largest of the genus, inhabit the shores of Central America, between West Columbia and California; another species of this type, *A. Patagonica*, is recorded from the southern country whose name it bears, but I have not been able to authenticate this locality, and it seems doubtful. The remaining American species, *A. subquadrata*, is from Peru, and of very abnormal character; the shell being thin in substance, not symmetrically orbicular, and without a lunule. The Australian species are typified by the characteristic *A. incisa*, *lamellata*, and *scalaris*, the last of which is represented in the Philippine Islands by *A. juvenilis*, whilst *A. variegata* is common to both these localities. *A. plana*, from the coast of China, has the valves remarkably flattened, and *A. exasperata*, from the Philippine Islands, is the type of another interesting group in which the concentric ridges are thin, and raised at the sides, chiefly the posterior, in squamate laminæ. A very singular form, with a supplementary lunule, *A. bilunulata*, is found at Japan; and, on the shores of the Red Sea, a type of totally different growth, contracted and gibbous, is represented by *A. trigona*.

Species 1. (Mus. Cuming.)

ARTEMIS ISOCARDIA. *Art. testâ cordato-ovatâ, alliore quam latâ, solidiusculâ, gibbosâ, concentricè acutè striatâ, striis subirregularibus, areâ ligamenti excavatâ, lunulâ cordatâ, subampliclâ, parum concavo-impressâ; glaucâ, violaceo tinctâ.*

THE ISOCARDIA ARTEMIS. Shell cordately ovate, higher than broad, rather solid, gibbous, concentrically sharply striated, striae somewhat irregular, area of the ligament excavated, lunule heart-shaped, rather large, but little concavely impressed; glaucous, tinged with violet.

DUNKER, Phil. Abbild. und Besch. Conch. *Cyth.* p. 36. pl. 8. f. 5.

Hab. — ?

A solid, gibbous, heart-shaped species, approaching in form to Chemnitz's figure of *Venus contracta* (*Artemis contracta*, Philippi), which I have not been able to identify.

Species 2. (Mus. Cuming.)

ARTEMIS LINCTA. *Art. testâ orbiculari, crassâ, gibbosiusculâ, creberrimè tenuissimè et irregulariter concentricè striatâ, striis ad latera elevatiusculis, confertis, areâ ligamenti subplanatâ, parum excavatâ, lunulâ oblongo-cordatâ, impressâ.*

THE SUCKED ARTEMIS. Shell orbicular, thick, rather gibbous, very closely, finely, and irregularly concen-

trically striated, striæ somewhat raised and thick-set at the sides, area of the ligament rather flattened, but little excavated, lunule oblong-cordate, impressed.

DESHAYES, *Traité Élém.* pl. 20. f. 12, 13.

Ventres/Ancla, Pulteney.

Cytherea lineata, Lamarck.

Cytherea sinuata, Turton.

An eadem var. *Artemis compta*, Löven.

Hab. Southern Europe and the British Isles (from low-water mark to a depth of about sixty fathoms).

Species 3. (Mus. Cuming.)

ARTEMIS RUFA. *Art. testâ suborbiculari, crassiusculâ, subgibbosâ, concentricè liratâ, liris ad latera subprominentioribus, areâ ligamenti subamplâ, excavatâ, lunulâ cordatâ, impressâ; ferrugineo-rufâ, varîe albiradiatâ.*

THE RED ARTEMIS. Shell nearly orbicular, rather thick and gibbous, concentrically ridged, ridges rather more prominent, area of the ligament rather large, excavated, lunule cordate, impressed; rust-red, variously rayed with white.

Cytherea rufa, Lamarck, *Anim. sans vert.* (Deshayes' edit.) vol. vi. p. 311.

Hab. — ?

Although readily distinguished from typical examples of *A. juvenilis*, many may incline, with M. Deshayes, to regard it as a variety of that species.

Species 4. (Mus. Cuming.)

ARTEMIS PONDEROSA. *Art. testâ suborbiculari, compressiusculâ, paululum latiore quam altâ, concentricè sulcatâ, sulcis medio ferè obsolete, areâ ligamenti simplici, lunulâ oblongo-cordatâ, concavo-impressâ; lacteâ, epidermide tenui cornuâ nitente indulâ.*

THE PONDEROUS ARTEMIS. Shell nearly orbicular, rather compressed, a little broader than high, concentrically grooved, grooves almost obsolete in the middle, area of the ligament simple, lunule oblong-cordate, concavely impressed; cream-colour, covered with a thin, shining, horny epidermis.

GRAY, *Analyst*, 1838, vol. viii. p. 309.

Artemis gigantea, Philippi (fide Sowerby, MS. ined.)

Hab. Gulf of California (in sandy mud at low water).

This fine large species approaches very closely to the *A. concentrica*; it is of a more orbicular form, and the sculpture is less definitely engraved.

Species 5. (Mus. Cuming.)

ARTEMIS JUVENILIS. *Art. testâ suborbiculari, crassiusculâ, concentricè tenuiliratâ, liris ad latera sublamellatis, areâ ligamenti subamplâ, excavatâ, lunulâ cordatâ, plano-impressâ; albâ, biradiatâ, rufo maculatâ.*

THE YOUTHFUL ARTEMIS. Shell nearly orbicular, rather thick, concentrically finely ridged, ridges slightly lamellated at the sides, area of the ligament rather large, excavated, lunule cordate, flatly impressed; white, two-rayed, blotched with rust-red.

Venus juvenilis, Gmelin, *Syst. Nat.* p. 3287.

Venus juvenis, Chemnitz.

Hab. Bay of Manila, Island of Luzon, Philippines (in sandy mud); Cuming.

The colouring of this species is very similar to that of the Australian *A. scalaris*, of which it might easily be taken for a dwarf variety.

Species 6. (Mus. Cuming.)

ARTEMIS CHINENSIS. *Art. testâ subquadrato-orbiculari, tenuiculâ, valdè gibbosâ, concentricè subirregulariter striatâ, striis elevatiusculis, striis aliis tenuibus impressis radiantibus decussatis, areâ ligamenti simplici, lunulâ nullâ, marginibus intus crenulatis; albâ, ferrugineo tinctâ, marginem versus cinereo-cærulescente.*

THE CHINESE ARTEMIS. Shell somewhat squarely orbicular, rather thin, very gibbous, concentrically rather irregularly striated, striæ somewhat raised, crossed with other thin impressed radiating striæ, area of the ligament simple, no lunule, margins crenulated within; whitish, tinged with rust-brown, coloured with ash-blue towards the margin.

Venus Chinensis, Chemnitz, *Conch. Cab.* vol. x. p. 356. pl. 171. f. 1663.

Cyprina tenuistria, Lamarck.

Hab. China, Korea.

This species has the characteristic pallial impression of *Artemis*, although the shell, having no lunule, is somewhat of an abnormal form. It was certainly incorrectly placed by Lamarck in the genus *Cyprina*. It ranges from China as far north as the islands of the Korean Archipelago, where the species is abundant and the animal is eaten by the inhabitants as a common article of food. Some specimens are much more gibbous, or rather globose, in their growth than others. The colour most inclines to bluish lavender or ash towards the margin.

Species 7. (Mus. Cuming.)

ARTEMIS HEPATICA. *Art. testâ subquadrato-orbiculari, tenuiculâ, compressâ, concentricè tenuissimè striatâ, sub lente striis tenuissimis radiantibus impressâ, areâ ligamenti simplici, lunulâ subelongato-cordatâ, superficialiariâ, viz nullâ; livido-cærulescente, umbonibus pallide rufescentibus aut flavis, intus violaceâ.*

THE LIVER-COLOURED ARTEMIS. Shell somewhat squarely orbicular, rather thin, compressed, concentrically very finely striated, impressed beneath the lens with very fine radiating striæ, area of the ligament simple, lunule rather elongately cordate, superficial, scarcely any; livid-blue, umbones pale reddish or yellowish, interior violet.

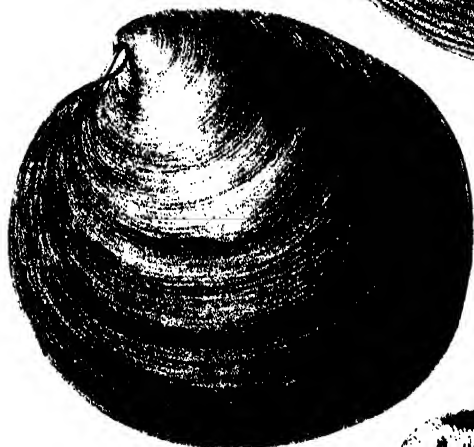
PHILIPPI, *Abbild. und Besch. Conch. Cyth.* pl. 4. pl. f. 13.

Hab. — ?

Like the preceding species in form, only smaller and flattened. It is faintly impinging striæ, and there is little indication of a



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ARTEMIS.

PLATE II.

Species 8. (Mus. Cuming.)

ARTEMIS CONCENTRICA. *Art. testā transversē ovatā, latiore quam altā, compressā, posticē subproductā, concentricē creberrimē inciso-sulcatā, sulcis vix profundis, areā ligamenti simplici, lunulā cordatā; albā, epidermide stramineā indulā.*

THE CONCENTRIC ARTEMIS. Shell transversely ovate, broader than high, compressed, somewhat produced posteriorly, concentrically very closely grooved, grooves not very deep, area of the ligament simple, lunule heart-shaped; white, covered with a straw-coloured epidermis.

Venus concentrica, Gmelin, Syst. Nat. p. 3286.

Hab. Porto Portrero, Central America; Cuming.

It is impossible exactly to determine which species Gmelin intended for the type of his *Venus concentrica*; and of succeeding authors, some have figured one for it, some another. The shell here represented seems best to agree with the figures of Lister and Chemnitz.

Species 9. (Mus. Cuming.)

ARTEMIS DISCUS. *Art. testā tenuiculā, transversē ovatā, posticē subquadratā, latiore quam altā, valdē compressā, concentricē subtilissimē inciso-striatā, liris intermediis ad latera subobsoletis et numero decrescentibus, areā ligamenti simplici, lunulā rotundato-cordatā; albidā, fasciis pallidē ferrugineis, interdum autem obscurē tinctā, epidermide tenui corneā indutā.*

THE QUOIT ARTEMIS. Shell rather thin, transversely ovate, posteriorly somewhat square, broader than high, very compressed, concentrically very finely engraved with striae, intermediate ridges rather obsolete and decreasing in number at the sides, area of the ligament simple, lunule rotundately heart-shaped; whitish, sometimes, but obscurely, stained with light rust bands, and covered with a thin horny epidermis.

Hab. United States.

This fine species is chiefly distinguished by its compressed growth and fine sculpture.

Species 10. (Mus. Cuming.)

ARTEMIS ANUS. *Art. testā subquadrato-orbiculari, crassā, compresso-convexā, concentricē rugoso-liratā, liris hic*

illic divaricatis, ad latera numero nullū decrescentibus, sed corrugatis et lamellaribus, præcipuē ad posticum, areā ligamenti excavatā, lunulā oblongo-cordatā, profundē impressā; carneo-albā, marginem versus et ad umbones rufescentibus.

THE SHRIVELLED ARTEMIS. Shell somewhat squarely orbicular, thick, compressly convex, concentrically rugosely ridged, ridges here and there divaricate, considerably decreasing in number at the sides, but shrivelled and lamellar, especially at the posterior side, area of the ligament excavated, lunule oblong-cordate, deeply impressed; flesh-white, reddish at the umbones and towards the margin.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 23. *Cyth.* pl. 8. f. 1.

Hab. New Zealand; Earl.

This fine species, which is of rather solid growth, is chiefly characterized by the manner in which the concentric ridges divaricate on the posterior side into comparatively distant wrinkled lamellae. The brick-red tinge of colouring upon the umbones and towards the margin, is also peculiar. The lunule is rather deeply sunk.

Species 11. (Mus. Cuming.)

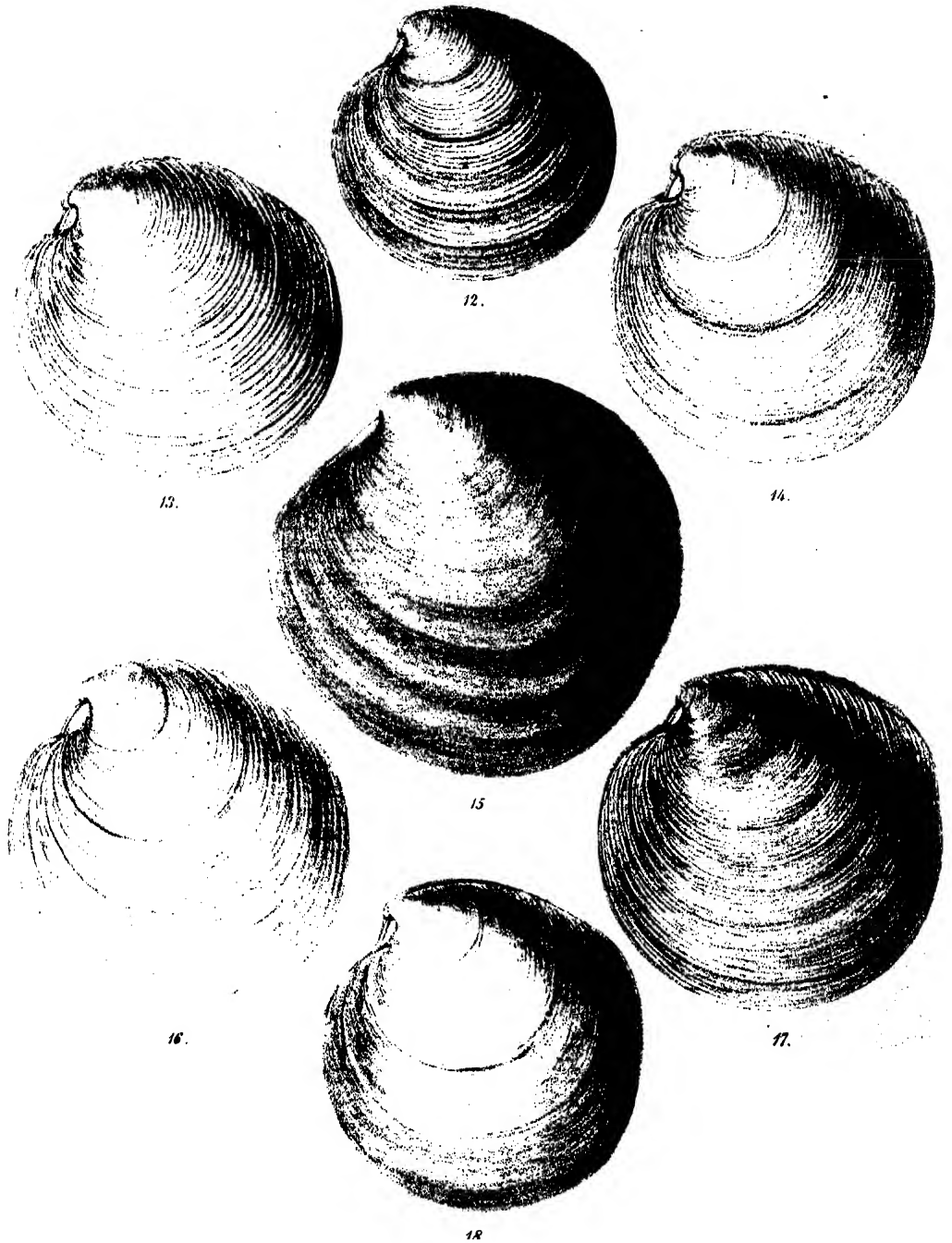
ARTEMIS SCALARIS. *Art. testā suborbiculari, aliquantū latiore quam altā, concentricē creberrimē liratā, liris in medio appressis, ad latera angustioribus, sublamellaribus, areā ligamenti simplici, lunulā cordatā; albidā, spadiceo-rufa plus minusve tinctā aut fasciatā.*

THE STEP-LADDER ARTEMIS. Shell somewhat orbicular, a little broader than high, concentrically very closely ridged, ridges appressed in the middle, narrower and somewhat lamellar at the sides, area of the ligament simple, lunule cordate; whitish, more or less stained and banded with fawn-red.

Cytherea scalaris, Menke, Moll. Nov. Holl. p. 42. no. 241. *Hab.* Mouth of the Swan River, New Holland.

The *Artemides* have so little of colour, that where it is present it forms a characteristic feature. This beautiful Australian species may be readily known by its peculiar fawn-red colouring, as well as by the arrangement of the concentric ribs, which, instead of becoming less numerous at the sides as in most species, converge together without diminishing in number, by growing narrower, closer, and more elevated.





ARTEMIS.

PLATE III.

Species 12. (Mus. Cuming.)

ARTEMIS NITENS. *Art. testā suborbiculari, compressā, aliquantō latiore quam altā, concentricè inciso-sulcatā, liris intermediis, appressis, areā ligamenti simplici, lunulā cordatā; albā, epidermide tenui, cornēā, nitente, indutā.*

THE SHINING ARTEMIS. Shell nearly orbicular, compressed, a little broader than high, concentrically engraved with grooves, intermediate ridges appressed, area of the ligament simple, lunule cordate; white, covered with a thin, shining, horny epidermis.

Hab. — ?

Very like *A. gigantea* in general aspect, but not agreeing sufficiently in form to be considered as the young of it. The umbones are more produced, whilst the shell is compressed and proportionably wider.

Species 13. (Mus. Cuming.)

ARTEMIS LAMELLATA. *Art. testā suborbiculari, compressiusculā, aliquantō latiore quam altā, circa umbones subtilissimè striatā, deinde sulcatā et lamellatā, lamellis binis acutis, umbones versus inclinatis, ad latera paucioribus, elevatis, areā ligamenti subexcavatis, lamellatis, lunulā oblongo-cordatā, subprofundā; albā.*

THE LAMELLATED ARTEMIS. Shell nearly orbicular, rather compressed, a little broader than high, very finely striated around the umbones, then grooved and lamellated, lamellæ two and two, sharp, at the sides fewer and more elevated, area of the ligament slightly excavated, lamellated, lunule oblongo-cordate, rather deep; white.

Hab. North Australia; Jukes.

Distinguished from all the species by its sharp, concentric lamellæ, which are slightly inclined back towards the umbones.

Species 14. (Mus. Cuming.)

ARTEMIS SCABRIUSCULA. *Art. testā suborbiculari, convexā, solidiusculā, viz latiore quam altā, posticè superne subangulatā, concentricè tenuissimè et creberrimè liratā, liris ad latera acutè lamellaribus, areā ligamenti latè excavatā, lamellatā, margine subspinosa, lunulā cordatā, profundè impressā; albā.*

THE ROUGHENED ARTEMIS. Shell nearly orbicular, convex, rather solid, scarcely broader than high, posteriorly slightly angled at the upper part, concentrically very finely and closely ridged, sharply lamellar at the sides, area of the ligament broadly excavated, lamellated, somewhat spinose at the margin, lunule heart-shaped, deeply impressed; white.

PHILIPPI, Abbild. und Besch. Conch. vol. ii. p. 230. *Cyth.* pl. 5. f. 2.

Hab. — ?

Of more solid growth than the preceding species, with the ridges less eminently raised in lamellæ at the sides, notwithstanding that they are more spinose on the posterior angle, owing to the deeper excavation of the ligamentary area.

Species 15. (Mus. Cuming.)

ARTEMIS SUBQUADRATA. *Art. testā subquadrato-orbiculari, tenui, medio tumidiusculā, basin versus obscure attenuatā, concentricè creberrimè et subtilissimè striatā, areā ligamenti simplici, lunulā nullā; sordidè albā, epidermide tenuissimā indutā.*

THE SQUARE-INCLINED ARTEMIS. Shell somewhat squarely orbicular, thin, rather swollen in the middle, obscurely attenuated towards the base, concentrically very closely and finely striated, area of the ligament simple, no lunule; dead white, covered with a very thin epidermis.

HANLEY, Wood, Index Test. Supp. Pl. 15. f. 39.

Hab. St. Elena, West Columbia (in sandy mud at low water), and Lobos Island, Peru (in sandy mud at a depth of from six to seventeen fathoms); Cuming.

This species is typically distinct from all others of the genus, very thin and tumid, without any lunule.

Species 16. (Mus. Cuming.)

ARTEMIS INCISA. *Art. testā orbiculari, convexo-compressā, undique conspicuè concentricè inciso-sulcatā, liris intermediis regularibus, appressis, ad latera subacutis, areā ligamenti simplici, lunulā oblongo-cordatā, impressā; nitidè albā.*

THE ENGRAVED ARTEMIS. Shell orbicular, convexly compressed, conspicuously concentrically sharply

grooved throughout, intermediate ridges regular, appressed, rather sharp at the sides, area of the ligament simple, lunule oblong-cordate, impressed; shining white.

Hab. North Australia; Jukes.

Allied to the typical species of the genus *A. concentrica*, from which it differs mainly in being more truly orbicular.

Species 17. (Mus. Cuming.)

ARTEMIS JAPONICA. *Art. testā suborbiculari, compressā, aliquantū latiore quam altā, posticè supernè angulosā, concentricè subtiliter elevato-striatā, striis ad latera paucioribus, sublamellatis, areā ligamenti latè excavatā, margine subproductā et obscurè spinosā, lunulā oblongo-cordatā, impressā; sordidè carneo-cinerascente.*

THE JAPAN ARTEMIS. Shell nearly orbicular, a little broader than high, posteriorly angular along the upper part, concentrically finely elevately striated, striae fewer and slightly lamellated at the sides, area of the ligament broadly excavated, somewhat produced and obscurely spinose along the edge, lunule oblong-cordate, impressed; dull flesh-tinged ash-colour.

Hab. Japan; Dr. Siebold.

A very characteristic species, of quite a different type from those of North Australia, being closely sculptured with sharp, raised striae, which diminish materially in number at the sides and incline to form lamellae.

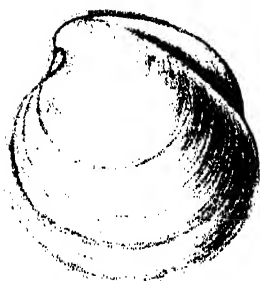
Species 18. (Mus. Cuming.)

ARTEMIS PLANA. *Art. testā orbiculari, supernè subacuminatā, peculiariter plano-compressā, concentricè subtilissimè et creberrimè striatā, striis medio plus minus obsoletis, areā ligamenti simplici, lunulā oblongo-cordatā, umbonibus parvis; albā, epidermide cornè tenuissimā marginem versus indutā.*

THE FLAT ARTEMIS. Shell orbicular, somewhat acuminate towards the upper part, peculiarly flatly compressed, concentrically very finely and closely striated, striae more or less obsolete in the middle, area of the ligament simple, lunule oblong-cordate, umboes small; white, covered towards the margin with a thin horny epidermis.

Hab. China.

Remarkable for its thin, compressly flattened growth, whilst the concentric sculpture is so fine that it might escape observation.



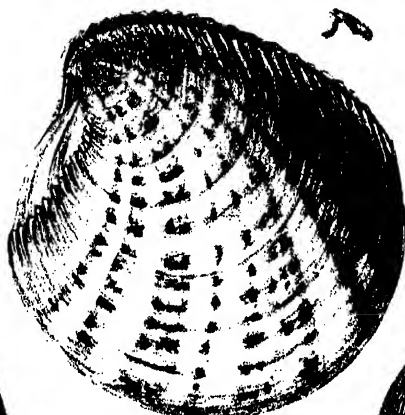
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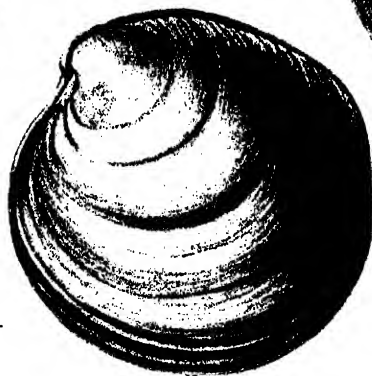
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ARTEMIS.

PLATE IV.

Species 19. (Mus. Cuming.)

ARTEMIS SUBROSEA. *Art. testâ suborbiculari, aliquantò latiore quam altâ, convexâ, concentricè nitidâ creberrimè elevato-striatâ, striis ad latera viz elevatioribus, areâ ligamenti subexcavatâ, lunulâ cordatâ, impressâ; pallide rosaceo-spadicetâ.*

THE ROSE-TINGED ARTEMIS. Shell nearly orbicular, a little broader than high, convex, concentrically very closely sculptured with neat raised striæ, which are scarcely more elevated at the sides, area of the ligament slightly excavated, lunule cordate, impressed; pale pinkish-fawn.

GRAY, Yates' New Zealand, p. 309.

Hab. New Zealand.

A. subrosea approaches very nearly in form, colour, and sculpture, to the *A. Japonica*; which is remarkable in two species from such distant localities. The area of the ligament is more widely excavated in the latter, and the striæ inclined to become lamellated at the sides.

Species 20. (Mus. Cuming.)

ARTEMIS ALATA. *Art. testâ suborbiculari, supernè attenuatâ, aliquantò altiore quam latâ, compresso-planâ, posticè peculiariter sulcatâ, deinde alatâ, concentricè subtilissimè inciso-striatâ, sublevigatâ; albâ, epidermide tenuissimâ marginem versus indutâ.*

THE WINGED ARTEMIS. Shell nearly orbicular, attenuated at the upper part, a little higher than broad, compressly flattened, peculiarly grooved, and then winged posteriorly, concentrically very finely sculptured with engraved striæ, rather smooth; white, covered towards the margin with a very thin epidermis.

Hab. — ?

Distinguished from all other species of the genus by the peculiar winged structure of the upper posterior margin.

Species 21. (Mus. Cuming.)

ARTEMIS EXASPERATA. *Art. testâ subquadrato-orbiculari, concentricè irregulariter sulcatâ, liris subundatis, hic illic convergentibus, ad latera prominentioribus, inter-*

ruptis et corrugatis, ad marginem conspicuè squamato-lamellatis, erectis, areâ ligamenti latè excavatâ, levigatâ, lunulâ cordatâ, lineâ profunde impressâ circumscriptâ; lacteâ.

THE SHARP ARTEMIS. Shell somewhat squarely orbicular, concentrically irregularly grooved, ridges slightly waved, here and there converging together, more prominent at the sides, interrupted and wrinkled, conspicuously elevated at the margin into squamate lamellæ, area of the ligament broadly excavated, smooth, lunule cordate, surrounded with a deeply impressed line; cream-colour.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 24. *Cyth.* pl. 8. f. 4.

Hab. Bay of Manilla, Island of Luzon, Philippines (in sandy mud); Cuming.

Very distinctly characterized by the irregular wrinkled growth of the concentric ridges, and by the manner in which they are elevated into lamellar scales along the posterior margin.

Species 22. (Mus. Brit.)

ARTEMIS BILUNULATA. *Art. testâ subtrigono-orbiculari, supernè attenuatâ, compressâ, planatâ, concentricè tenuissimè striatâ, striis ad latera subprominentioribus, in squamis lamellaformibus terminatis, ad latus anticum ante marginem lunulam secundam formantibus, areâ ligamenti latissimè excavatâ, levigatâ, lunulâ primâ cordatâ, subprofundè impressâ, secundâ oblongo-cordatâ, multò majore; albâ, radiis pallide roseis interruptis concinne pictâ.*

THE DOUBLE-LUNULED ARTEMIS. Shell somewhat triangularly orbicular, attenuated at the upper part, compressed, flattened, concentrically very finely striated, striæ rather more prominent at the sides, terminating in lamellæform scales, before reaching the edge on the anterior side forming a second lunule, area of the ligament very broadly excavated, smooth, first lunule cordate, rather deeply impressed, second lunule oblong-cordate, much the larger; white, prettily painted with light rose interrupted rays.

GRAY, Analyst Quart. Journ. 1838, Part 24. p. 309.

Hab. Japan; Dr. Siebold.

An extremely interesting species, remarkable for the second lunule, which is formed by the ridges terminating

in lamellæform scales before reaching the edge of the shell. The coloured rays constitute also a characteristic feature in this comparatively colourless genus.

Species 23. (Mus. Cuming.)

ARTEMIS PROSTRATA. *Art. testâ quadrato-orbiculari, valdè depressâ, concentricè liratâ, liris ad latera irregulariter convergentibus et corrugatis, marginem versus lamellaribus et squamatis, areâ ligamenti subexcavatâ, lunulâ elongato-cordatâ; sordidè fulvâ.*

THE FLATTENED ARTEMIS. Shell squarely orbicular, very depressed, concentrically ridged, ridges converging irregularly at the sides and wrinkled, lamellar and squamate towards the margin, area of the ligament slightly excavated, lunule elongately cordate; dull fulvous colour.

Venus prostrata, Linnæus, Syst. Nat. (12th. edit.) p. 1133.

Enc. Méth. pl. 277. f. 1. *Venus prostrata* L.

Hab. Mouth of the Swan River, New Holland; Collie.

Peculiarly inclined to grow square, and further characterized by the irregular converging together and wrinkling of the ridges.

Species 24. (Mus. Cuming.)

ARTEMIS CORRUGATA. *Art. testâ suborbiculari, aliquantò latiore quam altâ, lenui, convexâ, concentricè striatâ, striis in medio ferè obsoletis, ad latus posticum liras convergentes et corrugatas formantibus, ad latus anticum minus elevatis, longitudinaliter lineis indentatis obsoletè radiatâ, areâ ligamenti simplici, lunulâ suboblongo-cordatâ; sordidè spadiceo-albâ.*

THE WRINKLED ARTEMIS. Shell nearly orbicular, a little broader than high, thin, convex, concentrically striated, striæ almost obsolete in the middle, forming wrinkled and converging ridges at the posterior side, much less elevated on the anterior side, longitudinally obsoletely rayed with indented lines, area of the ligament simple, lunule oblong-cordate; dull fawn white.

Hab. — ?

A light, thin species, with a greater difference between the sculpture of the middle and sides of the shell than usual.

Species 25. (Mus. Brit.)

ARTEMIS CÆRULEA. *Art. testâ orbiculari, medio convexo-tumidâ, posticè subangulatâ, crassâ, concentricè subtiliter elevato-striatâ, areâ ligamenti sublatè excavatâ, lunulâ cordatâ; albîdâ, umbones versus rosaceo et cæruleo tinctâ.*

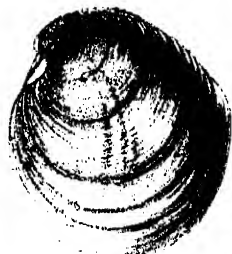
THE BLUE-TINGED ARTEMIS. Shell orbicular, convexly tumid in the middle, posteriorly slightly angled, thick, concentrically finely elevately striated, area of the ligament rather broadly excavated, lunule cordate; whitish, tinged with pink and blue towards the umboes.

Hab. Raines' Island, Torres Straits; Captain Ince.

A solid species, in which the concentric striæ are not more prominent at the sides than elsewhere; whilst the delicate pink and blue colouring about the umboes is characteristic.



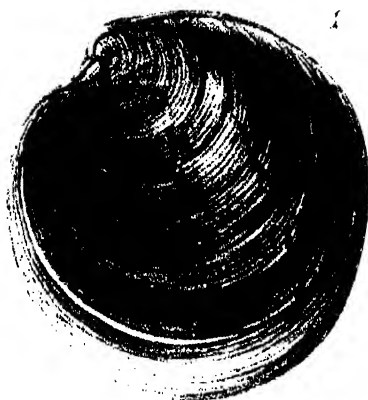
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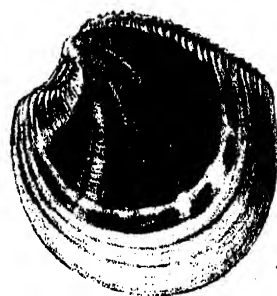
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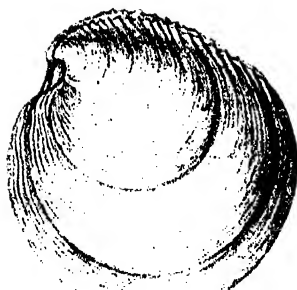
29.



29 b.



30.



31.

ARTEMIS.

PLATE V.

Species 26. (Mus. Cuming.)

ARTEMIS FIBULA. *Art. testā orbiculari, crassiusculā, plano-conveẏā, concentricē creberrimē tenuistriatā, striis ad latera subelevatioribus, areā ligamenti subampliter excavatā, lunulā cordatā, profundē impressā; lutescente-albā.*

THE BUTTON ARTEMIS. Shell orbicular, rather thick, flatly convex, concentrically very closely finely striated, striæ rather more elevated at the sides, area of the ligament rather largely excavated, lunule heart-shaped, deeply impressed; yellowish-white.

Hab. Mouth of the Gambia, West Africa.

Principally remarkable for the deeply impressed growth of the lunule.

Species 27. (Mus. Cuming.)

ARTEMIS AFRICANA. *Art. testā suborbiculari, umbones versus subattenuatā, compresso-conveẏā, concentricē tenuistriatā, striis ad latera subelevatioribus, areā ligamenti conspicuē lanceolato-excavatā, lunulā cordatā, subprofundē impressā; fuscescente-albā, umbones versus pellucido-carneo tinclā, intus sæpē fusco-rubente.*

THE AFRICAN ARTEMIS. Shell nearly orbicular, slightly attenuated towards the umboes, compressly convex, concentrically finely striated, striæ rather more elevated at the sides, area of the ligament conspicuously lanceolately excavated, lunule cordate, rather deeply impressed; brownish-white, stained with transparent flesh-colour towards the umboes, interior often brownish-red.

GRAY, Analyst, 1838, vol. viii. p. 309.

Le Dosin, Adanson.

Artemis Adansonii, Philippi.

Hab. Senegal, West Africa.

The transparent flesh-tinge around the umboes of this species, forms one of its characteristic peculiarities.

Species 28. (Mus. Cuming.)

ARTEMIS CÆLATA. *Art. testā subquadrato-orbiculari, tenuiculā, compressā, concentricē subtilissimē striatā, striis creberrimis, ad latera nullō paucioribus, subcorrugatis,*

areā ligamenti simplici, areā secundā subexcavatā, tenuē laminatā, circumdatā, lunulā subelongato-cordatā; albā, umbonibus flavicantibus.

THE CARVED ARTEMIS. Shell somewhat squarely orbicular, rather thin, compressed, concentrically very finely striated, striæ very close-set, much fewer in number at the sides, slightly corrugate, area of the ligament simple, surrounded by a second slightly excavated thinly laminated area, lunule rather elongately cordate; white, umboes yellowish.

Hab. Catanaun, Island of Luzon, Philippines (in fine sand at low water); Cuming.

Characterized in an especial manner on the posterior side by a delicately carved supplementary area.

Species 29. (Fig. a and b, Mus. Cuming.)

ARTEMIS EXOLETA. *Art. testā viz quadrato-orbiculari, concentricē irregulariter rudē striatā, areā ligamenti simplici, angustā, lunulā oblongo-cordatā, subimpressā; lacteā, fuscescente-rufō obscure radiatā aut promiscuē variegatā, lunulā fuscescente.*

THE WORN ARTEMIS. Shell slightly squarely orbicular, concentrically irregularly rudely striated, area of the ligament simple, narrow, lunule oblong-cordate, rather impressed; cream-colour, obscurely rayed or promiscuously variegated with brownish-red, lunule brownish.

DESHAYES, *Traité Élém.* pl. 20. f. 9-11.

Venus exoleta, Linnæus.

Pectunculus capillaceus, Da Costa.

Cytherea exoleta, Lamarck.

Hab. British and European shores (in sandy ground from low-water mark to a depth of from seventy to eighty fathoms).

A curious transition may be traced from this well-known European species, into *A. variegata*, inhabiting the Eastern Seas between the Philippine Islands and Australia.

Species 30. (Mus. Cuming.)

ARTEMIS CUMINGII. *Art. testā viz orbiculari, posticē conspicuē angulato-productā et truncatā, concentricē subtilissimē et creberrimē striatā, striis ad latera con-*

March, 1850.

ARTEMIS.—PLATE V.

vergentibus, extremitatibus per marginem posticum squamato-laminatis, areâ ligamenti peramplâ, latâ, parùm excavatâ, lunulâ cordatâ, impressâ; albidâ, ferrugineo-fusco eximie tinctâ et radiatâ.

CUMING'S ARTEMIS. Shell scarcely orbicular, conspicuously angularly produced and truncated behind, concentrically very finely and closely striated, striae converging at the sides, the extremities being squamately laminated along the posterior margin, area of the ligament very large, broad, but little excavated, lunule cordate, impressed; whitish, delicately stained and rayed with rust-brown.

Hab. San Nicolas, Island of Zebu, Philippines (in sandy mud); Cuming.

A very distinct species, remarkable for its angularly produced growth posteriorly, and the spacious ligament-area thereby occasioned.

Species 31. (Mus. Cuming.)

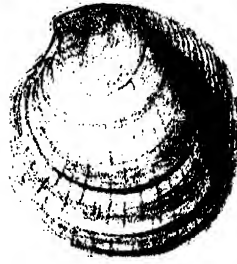
ARTEMIS GRUNERI. *Art. testâ orbiculari, posticâ subangulatâ, umboes versus paululum attenuatâ, compressiusculâ, concentricè creberrimè striatâ, stria ad latera convergentibus, per marginem posticum sublaminatis, areâ ligamenti peramplâ, parùm excavatâ, lunulâ cordatâ, impressâ; albâ, umbonibus flavicantibus.*

GRUNER'S ARTEMIS. Shell orbicular, slightly angled posteriorly, a little attenuated towards the umboes, rather compressed, concentrically very closely striated, striae converging at the sides, slightly laminated along the posterior margin, area of the ligament very large, but little excavated, lunule cordate, impressed; white, umboes yellowish.

PHILIPPI, Abbild. und Besch. Conch. Cytb. p. 35. pl. 8. f. 2.

Hab. China.

Allied in form and general character to *A. Africana*, but of larger dimensions.



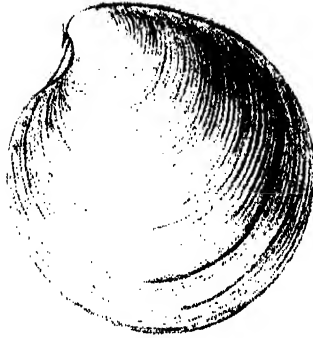
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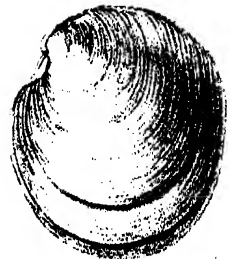
33. b.



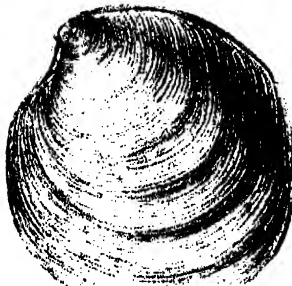
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33. c.



35.



36.

ARTEMIS.

PLATE VI.

Species 32. (Mus. Cuming.)

ARTEMIS PENICILLATA. *Art. testâ subquadrato-orbiculari, tenuiculâ, compressâ, concentricè subtiliter et creberrimè striatâ, areâ ligamenti vix excavatâ, lunulâ oblongo-cordatâ, subobsoletâ; carneo-albidâ, lineis tenuibus nigricantibus interruptis, marginem versus peculiariter radiatâ.*

THE PENCILLED ARTEMIS. Shell somewhat squarely orbicular, rather thin, compressed concentrically finely and very closely striated, area of the ligament scarcely excavated, lunule oblong-cordate, rather obsolete; flesh-white, peculiarly rayed with fine interrupted blackish lines.

Hab. — ? .

The radiating interrupted lines of this species have the appearance of light pencillings.

Species 33. (Fig. a, b, c, Mus. Cuming.)

ARTEMIS VARIEGATA. *Art. testâ orbiculari, nunc tumidiusculâ, nunc compressâ, concentricè liratâ, liris interdum subtilibus numerosis, interdum sublaminatis, laminis umbones versus reflexis, areâ ligamenti vix excavatâ, lunulâ cordatâ, impressâ; albidâ, fasciis tribus rufo-castaneis plus minus distinctè radiatâ, interstitiis lineis flexuosis, sæpè interruptis, lunulâ fuscâ, umboibus interdum roseis, areâ ligamenti fusco tessellatâ.*

THE VARIEGATED ARTEMIS. Shell orbicular, sometimes rather swollen, sometimes compressed, concentrically ridged, ridges sometimes fine and numerous, sometimes slightly laminated, the laminæ being reflected towards the umboes, area of the ligament slightly excavated, lunule cordate, impressed; whitish, more or less distinctly rayed with three reddish-chestnut bands, of which the interstices are painted with flexuous lines often interrupted, lunule brown, umboes sometimes pink, area of the ligament tessellated with brown.

GRAY, Analyst, 1838, vol. viii. p. 309.

Venus exoleta variegata, Chemnitz.

Venus australis, Quoy and Gaimard (not of Gmelin or Chemnitz).

Artemis australis, Philippi.

Hab. Philippine Islands, Moluccas, Australia.

The present species, like all those of wide geographical distribution, is an extremely variable one. In the specimen represented at Fig. 33 b, from the Moluccas, which may be regarded as the type, the ridges are more distant, and the painting darker and more exact; in that at Fig. 33 c, the ridges are much finer and close-set, the colouring is fainter, and a curious transition is presented to the British *A. exoleta*, through the variety figured in Pl. V. Fig. 29 b. The most distinct variety of *A. variegata* is that from Australia represented at Fig. 33 a, in which the shell is more compressed, the ridges more laminated, and the colouring paler and more broken. The tessellated painting of the ligament-area and the dark colour of the lunule are characteristic in all the varieties.

Species 34. (Mus. Cuming.)

ARTEMIS DUNKERI. *Art. testâ subtrigono-orbiculari, undique regulariter concentricè sulcatâ, areâ ligamenti simplici, lunulâ suboblongo-ovatâ, parùm impressâ; albâ, nilente.*

DUNKER'S ARTEMIS. Shell somewhat triangularly orbicular, regularly concentrically grooved throughout, area of the ligament simple, lunule rather oblong-ovate, but little impressed; white, shining.

PHILIPPI, Abbild. und Besch. Conch. Cyth. p. 4. pl. 2. f. 5.

Hab. St. Elena and Panama, Central America (from sandy mud at low water); Cuming.

A fine species, sculptured with great regularity, belonging to the same typical section of the genus as *A. concentrica*.

Species 35. (Mus. Cuming.)

ARTEMIS CRETACEA. *Art. testâ orbiculâri, crassâ, posticè subflexuosâ, concentricè tenuè striatâ, striis ad latera elevatioribus, præcipuè per marginem posticum, areâ ligamenti subampliter excavatâ, lunulâ cordatâ, impressâ; albâ.*

THE CHALK ARTEMIS. Shell orbicular, thick, posteriorly rather flexuous, concentrically finely striated, striae more elevated at the sides, especially along the posterior margin, area of the ligament rather largely excavated, lunule heart-shaped, impressed; white.

ARTEMIS.—PLATE VI.

Hab. Manilla, Island of Luzon; Cuming.

The striae have all the appearance of fine delicate cords.

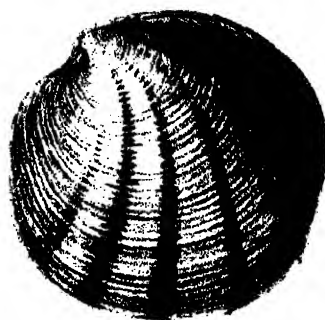
Fig. 36. (Mus. Cuming.)

This shell proves to be identical with that represented

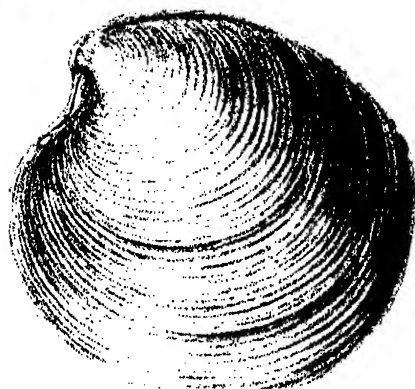
above at Fig. 35—*A. penicillata*. It agrees with it in form and sculpture, whilst the faint radiating interrupted lines which characterize that shell are present in this, though not sufficiently distinct to claim the attention of the artist.

For Sp. 36 see Pl. VIII.

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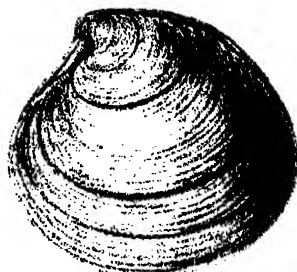
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43.

ARTEMIS.

PLATE VII.

Species 37. (Mus. Cuming.)

ARTEMIS RADIATA. *Art. testâ orbiculari, posticè subflexuoso-contortâ, concentricè crebrilibratâ, liris subirregularibus, scabriusculis, areâ ligamenti simplici, lunulâ suboblongo-cordatâ, impressâ; albâ, fulvo-roseo radiatâ.*

THE RAYED ARTEMIS. Shell orbicular, posteriorly somewhat flexuously contorted, concentrically closely ridged, ridges somewhat irregular, rather rough, area of the ligament simple, lunule rather oblong-cordate, impressed; whitish, rayed with fulvous pink.

Hab. Mouth of the Gambia, West Africa.

The rayed painting of this species is somewhat faint and broken, but very characteristic.

Species 38. (Mus. Cuming.)

ARTEMIS CONTUSA. *Art. testâ subglobosâ, crassâ, anticè subtrigonâ, concentricè impresso-striatâ, liris intermediis planulatis, nulentibus, areâ ligamenti latiusculâ, subexcavatâ, lunulâ latè cordatâ, impressâ; albâ, umbones versus lividâ, areâ ligamenti livido-violaceâ.*

THE BRUISED ARTEMIS. Shell somewhat globose, thick, triangularly inclined anteriorly, concentrically impressly striated, intermediate ridges flattened, shining, area of the ligament rather broad, slightly excavated, lunule broadly cordate, impressed; whitish, livid towards the umbones, area of the ligament livid-violet.

Hab. Point Cunningham, North Australia; Dring.

A stout, gibbous shell, characterized by a peculiar tinge of violet livid colouring around the umbones, and within the area of the ligament, which is rather broadly, but not deeply, excavated.

Species 39. (Mus. Cuming.)

ARTEMIS SIEBOLDII. *Art. testâ orbiculari, convexâ, concentricè subtiliter et creberrimè liratâ, liris ad latera, precipuè ad posticum, multò paucioribus, divaricatis et corrugatis, squamarum grandium serie unâ per marginem posticum, areâ ligamenti latiusculâ, vix excavatâ, lunulâ cordatâ; ferrugineo-spadicè, subobscurè fasciatâ.*

SIEBOLD'S ARTEMIS. Shell orbicular, convex, concen-

trically finely and very closely ridged, ridges much fewer at the sides, divaricate and wrinkled, with a single row of large scales along the posterior margin, area of the ligament rather broad, slightly excavated, lunule cordate; rusty bay, rather obscurely banded.

Hab. Japan; Dr. Siebold.

Belonging to the same type of the genus as *A. exasperata*, from which it clearly differs specifically.

Species 40. (Mus. Cuming.)

ARTEMIS PATAGONICA. *Art. testâ suborbiculari, parùm compressâ, concentricè sulcatâ, liris ad latera vix paucioribus, areâ ligamenti simplici, lunulâ subamplâ; albâ.*

THE PATAGONIAN ARTEMIS. Shell nearly orbicular, but little compressed, concentrically grooved, ridges scarcely fewer in number at the sides, area of the ligament simple, lunule rather large; white.

PHILIPPI, Abbild. und Besch. Conch. Cyth. p. 3. pl. 2. f. 1.

Hab. Patagonia; Philippi.

Closely allied in form and sculpture, in the appearance of the lunule, and in the simple area of the ligament, to *A. concentrica* and *ponderosa*.

Species 41. (Mus. Cuming.)

ARTEMIS LAMINATA. *Art. testâ orbiculari, posticè subangulatâ, concentricè laminatis, laminis tenuibus, umbones versus reflexis, ad latera majoribus, areâ ligamenti subexcavatâ, lunulâ cordatâ, parvâ, impressâ; albâ.*

THE LAMINATED ARTEMIS. Shell orbicular, slightly angled posteriorly, concentrically laminated, laminae thin, reflected towards the umbones, larger at the sides, area of the ligament slightly excavated, lunule heart-shaped, small, impressed; white.

Hab. Basay, Isle of Samar, Philippines; Cuming.

In specimens of less mature growth than that here figured the laminae are raised throughout the shell.

Species 42. (Mus. Cuming.)

ARTEMIS TRIGONA. *Art. testâ trigono-ovalâ, crassiusculâ, concentricè subirregulariter rugoso-striatâ, areâ liga-*

menti parviusculâ, simplici, lunulâ peramplâ, superficialiâ, ferè obsoletâ; albidâ, ferrugineo tinctâ, lunulâ cærulescente-albâ, nitente.

THE TRIANGULAR ARTEMIS. Shell triangularly ovate, rather thick, concentrically somewhat irregularly roughly striated, area of the ligament rather small, simple, lunule very large, superficial, almost obsolete; whitish, stained with rust-brown, lunule bluish-white, shining.

Hab. Red Sea.

Somewhat *Gnathodon*-like in form, and remarkable for the widely-spread superficial character of the lunule.

Species 43. (Mus. Cuming.)

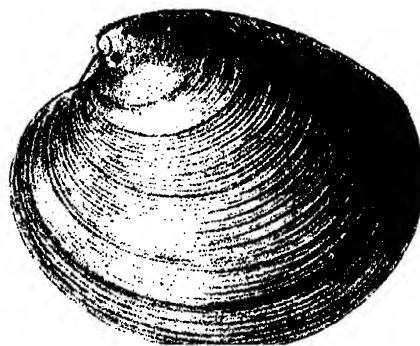
ARTEMIS EXCISA. *Art. tentâ subtrigono-orbiculari, crassiusculâ, concentricè rugoso-striatâ, areâ ligamenti profundè excavatâ, lunulâ amplâ, obsoletâ; albidâ.*

THE EXCAVATED ARTEMIS. Shell triangularly orbicular, rather thick, concentrically roughly striated, area of the ligament deeply excavated, lunule large, obsolete; whitish.

PHILIPPI, Abbild. und Besch. Conch. *Cyth.* p. 4. pl. 2. f. 4.
Venus excisus, Chemnitz.

Hab. Nicobar Island; Behn.

The lunule is more superficial and obsolete in this species than in the preceding. Its chief peculiarity consists in the deeply excavated ligament-area.



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48. n.



ARTEMIS.

PLATE VIII.

Species 36. (Mus. Cuming.)

ARTEMIS SERICEA. *Art. testā transversè ovatā, latiore quam altā, concentricè tenuissimè striatā, areā ligamenti simplici, subplanatā, lunulā cordatā, subamplā; flavicante-albā, umbones versus carneo tinctā.*

THE SILKEN ARTEMIS. Shell transversely ovate, broader than high, concentrically very finely striated, area of the ligament simple, a little flattened, lunule heart-shaped, rather large; yellowish-white, tinged with pink towards the umboes.

Hab. Japan; Dr. Siebold.

The minute and delicate character of the concentric striae give the shell a silken aspect.

Species 44. (Mus. Taylor.)

ARTEMIS ORBIGNYI. *Art. testā orbiculari, solidā, plano-convexā, concentricè striatā, striis tenuibus, elevatiusculis, regularibus, ad latera paucioribus, areā ligamenti lanceolato-excavatā, lunulā cordatā, subimpressā; albā, umbones versus livido-fuscescentibus.*

D'ORBIGNY'S ARTEMIS. Shell orbicular, solid, flatly convex, concentrically striated, striae fine, rather elevated, regular, fewer in number at the sides, area of the ligament lanceolately excavated, lunule cordate, somewhat impressed; white, livid-brown towards the umboes.

DUNKER, Philippi, Abbild. und Besch. Conch. Cyth. p. 32. pl. 6. f. 3.

Hab. Guinea; Tams.

A shell of rather solid growth, in which the striae are rather distant and have the appearance of fine cords. I doubt if Philippi's *A. livida* is anything more than a variety of this species.

Species 45. (Mus. Cuming.)

ARTEMIS LUCINOIDES. *Art. testā subquadrato-orbiculari, medio tumidā, posticè subcontractā, concentricè subtilissimè et creberrimè striatā, striis ad latera viz paucioribus, areā ligamenti lanceolato-excavatā, lunulā cordatā, impressā; sordidā albā.*

THE LUCINA-LIKE ARTEMIS. Shell somewhat squarely orbicular, swollen in the middle, slightly contracted

posteriorly, concentrically very finely and closely striated, striae rather fewer at the sides, area of the ligament lanceolately excavated, lunule cordate, impressed; dull white.

Hab. Moluccas.

Of a peculiar *Lucina*-form, extremely finely striated.

Species 46. (Mus. Hanley.)

ARTEMIS DUPLICATA. *Art. testā transversè ovatā, latiore quam altā, concentricè striatā, striis elevatiusculis, acutis, posticè duplicatis, areā ligamenti plano-excavatā, lunulā oblongo-cordatā, impressā; lacteā aut flavicante, umbonibus ad apices roseis.*

THE DUPLICATE ARTEMIS. Shell transversely ovate, broader than high, concentrically striated, striae rather elevated, sharp, ranging two and two on the posterior side, area of the ligament flatly excavated, lunule oblong-cordate, impressed; cream-colour or yellowish, umboes pink at the tips.

Hab. ——— ?

One of the chief peculiarities of this species consists in the striae ranging off on the posterior side in pairs.

Species 47. (Mus. Cuming.)

ARTEMIS CALCULUS. *Art. testā suborbiculari, plano-convexā, compressā, concentricè subtilissimè et creberrimè striato-liratā, areā ligamenti subampliter excavatā, lunulā cordatā, impressā; albā, umbonibus ad apices pallidè roseis.*

THE PEBBLE ARTEMIS. Shell nearly orbicular, flatly convex, compressed, concentrically very finely and closely striately ridged, area of the ligament rather largely excavated, lunule cordate, impressed; white, umboes tinged with pink at the tips.

Hab. Catanaun, Island of Luzon, Philippines (in fine sand at low water); Philippines.

Unusually compressed towards the lower margin.

Species 48. (Fig. a, Mus. Metcalfe. Fig. b, Mus. Taylor.)

ARTEMIS AMPHIDESMOIDES. *Art. testā suborbiculari, concentricè elevato-striatā, striis ad latera convergenti-*

ARTEMIS.—PLATE VIII.

bus, paucioribus, area ligamenti simplici, lunula cordata, subimpressa; alba aut rubida, obscure roseo-radiala, circa umbones violaceo-roseis.

THE AMPHIDESMA-LIKE ARTEMIS. Shell nearly orbicular, concentrically elevately striated, striæ converging and fewer in number at the sides, area of the ligament simple, lunule cordate, slightly impressed;

white or ruddy, obscurely pink-rayed, violet-pink around the umboes.

Hab. Island of Burias, Philippines (in coarse sand at the depth of six fathoms); Cuming.

The violet-rose colouring around the umboes is very characteristic in this species.



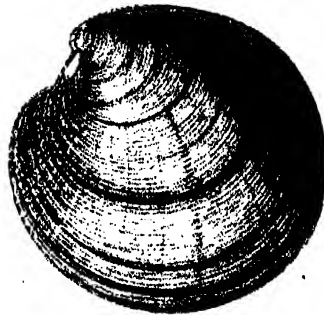
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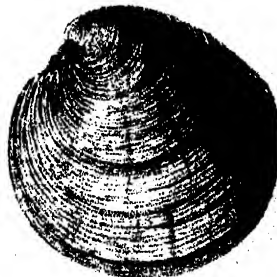
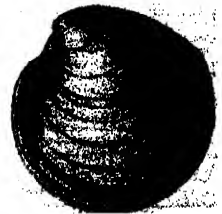
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ARTEMIS.

PLATE IX.

Species 49. (Mus. Hanley.)

ARTEMIS ASPERA. *Art. testā orbiculari, tenuiculā, subcompressā, concentricē creberrimē striatā, striis elevatiusculis, irregularibus, asperis, ad latera parūm prominentioribus, areā ligamenti plano-excavatā, lævigatā, lunulā cordatā; sordidē albā.*

THE ROUGH ARTEMIS. Shell orbicular, rather thin, somewhat compressed, concentrically very closely striated, striae rather raised, irregular, rough and sharp, but little prominent at the sides, area of the ligament flatly excavated, smooth, lunule cordate; dead white.

Hab. Manilla (in sandy mud at low water); Cuming.

A light shell, sculptured with sharp uneven striae.

Species 50. (Mus. Cuming.)

ARTEMIS LUNARIS. *Art. testā obliquē orbiculari, umbones versus attenuatā, solidiusculā, compressā, concentricē subobscurē impresso-striatā, areā ligamenti planulatā, parūm excavatā, lunulā elongato-cordatā; flavicante-albā, umbonibus ad apices roseis.*

THE LUNAR ARTEMIS. Shell obliquely orbicular, attenuated towards the umboes, rather solid, compressed, concentrically rather obscurely impressly striated, area of the ligament flattened, but little excavated, lunule elongately cordate; yellowish white, umboes pink at the tips.

Cytherea lunaris, Lamarck, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 314.

Hab. Mediterranean.

It seems doubtful whether the *Venus lupinus* of Poli refers to this species or to the young of *Artemis lineta*.

Species 51. (Mus. Cuming.)

ARTEMIS MACILENTA. *Art. testā suborbiculari, valdē inequilaterali, tenuissimā, compressā, lævigatā, vel striis incrementi minutē notatā, areā ligamenti simplici, lunulā oblongā, superficialiā, vix nullā; albā.*

THE LEAN ARTEMIS. Shell nearly orbicular, very inequilateral, very thin, compressed, smooth, or finely marked with striae of growth, area of the ligament simple, lunule oblong, superficial, scarcely any; white.

Hab. Salango, West Columbia (in sandy mud at the depth of nine fathoms); Cuming.

This very delicate shell, peculiar in form, seems scarcely to have reached maturity.

Species 52. (Mus. Metcalfe.)

ARTEMIS SCULPTA. *Art. testā suborbiculari, vix latiore quam altā, tumidiusculā, concentricē creberrimē striatoliriatā, liris striis radiantibus subundulatis ad latera decussatis, areā ligamenti simplici, lunulā oblongo-cordatā, subamplā; sordidē albā.*

THE SCULPTURED ARTEMIS. Shell nearly orbicular, scarcely broader than high, rather swollen, concentrically very closely striately ridged, ridges decussated at the sides with slightly waved radiating ridges, area of the ligament simple, lunule oblong-cordate, rather large; dead white.

Hab. — ?

The lateral radiating striae constitute a very characteristic feature in this species, the concentric ridges passing over them in festoons.

Species 53. (Mus. Cuming.)

ARTEMIS TURGIDA. *Art. testā suborbiculari, subrugosā, tenuiculā, tumidā, concentricē minutissimē striatā, areā ligamenti subappressā, lunulā cordatā, superficialiā; ferrugineo-albā, lineis rufescentibus radiantibus interruptis obscurē penicillatā.*

THE TURGID ARTEMIS. Shell nearly orbicular, rather uneven, thin, swollen, concentrically very minutely striated, area of the ligament a little appressed, lunule heart-shaped, superficial; rusty white, obscurely pencilled with fine interrupted radiating reddish lines.

Hab. — ?

This has somewhat the light form and appearance of a rounded *Tellina*.

Species 54. (Mus. Cuming.)

ARTEMIS MODESTA. *Art. testā suborbiculari, compressā, umbones versus subattenuatā, concentricē minutissimē et creberrimē impresso-striatā, striis irregularibus radiantibus obscurē notatā, areā ligamenti lanceolato-excavatā, lunulā oblongo-cordatā, impressā; carneo-albicante, nilente.*

ARTEMIS.—PLATE IX.

THE MODEST ARTEMIS. Shell nearly orbicular, compressed, slightly attenuated towards the umbones, concentrically very minutely and closely impressly striated, obscurely marked also with irregular radiating striae; flesh-tinged white, shining.

Hab. — ?

The radiating striae have the appearance of light scratches.

Species 55. (Mus. Cuning.)

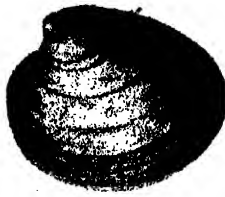
ARTEMIS BISCOCTA. *Art. testā suborbiculari, tumidiusculā, concentricè striatā, striis asperis, elevatiusculis, præ-*

cipue ad latera, areā ligamenti lanceolato-excavatā, lunulā cordatā, impressā; sordide albā, ferrugineo palidè tinctā.

THE BISCUIT ARTEMIS. Shell nearly orbicular, rather swollen, concentrically striated, striae sharp and uneven, rather elevated, especially at the sides, area of the ligament lanceolately excavated, lunule cordate, impressed; dead white, faintly rust-tinged.

Hab. Japan; Siebold.

The striae of this species are chiefly distinguished by their sharp broken character.



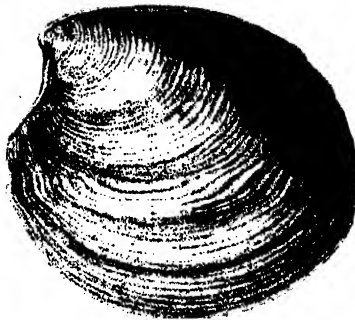
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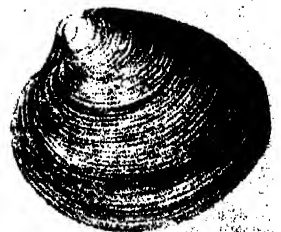
58.



59.



57.6



60.



61.

ARTEMIS.

PLATE X.

Species 56. (Mus. Hanley.)

ARTEMIS FERRUGINEA. *Art. testā subobliquè orbiculāri, solidiusculā; compressā, concentricè regulariter tenuistriatā, areā ligamenti subexcavatā, lunulā oblongo-cordatā, impressā; carneo-albidā, circa umbones ferrugineo-rufā, apicibus albis.*

THE RUSTY ARTEMIS. Shell somewhat obliquely orbicular, rather solid, compressed, concentrically regularly finely striated, area of the ligament slightly excavated, lunule oblong-cordate, impressed; flesh-white, rust-red around the umboes, tips white.

Hab. — ?

With somewhat the aspect of a *Tellina*, this shell is of rather solid growth, having little external sculpture and a deeply impressed lunule.

Species 57. (Mus. Cuming.)

ARTEMIS NANUS.* *Art. testā orbiculāri, subcordatā, gibbosiusculā, concentricè liratā, liris acutis, subdistantibus, areā ligamenti simplici, lunulā peramplā, superficialiā; sordidè albā.*

THE DWARF ARTEMIS. Shell orbicular, subcordate, rather gibbous, concentrically ridged, ridges sharp, rather distant, area of the ligament simple, lunule very large, superficial; dead white.

Hab. — ?

The ridges of this species are large, and somewhat distant from each other in proportion to the size of the shell.

Species 58. (Mus. Cuming.)

ARTEMIS GLAUCA. *Art. testā transversè ovalē, latiore quam altā, compressiusculā, concentricè striatā, striis medio superficialiis, ad latera acutè et tenuissimè liris, liris obscurè serratis, areā ligamenti via lanceolato-excavatā, lunulā cordatā, impressā; glauco-albidā.*

THE GLAUCOUS ARTEMIS. Shell transversely ovate, broader than high, rather compressed, concentrically striated, striae superficial, sharply and finely ridged at the sides, ridges obscurely serrated, area of the ligament slightly lanceolately excavated, lunule cordate, impressed; glaucous white.

Hab. San Nicolas, Island of Zebu, Philippines; Cuming.

A small compressed shell, smooth and polished in the middle, finely serrately ridged at the sides.

Species 59. (Mus. Metcalfe.)

ARTEMIS SIMPLEX. *Art. testā longitudinaliter ovalē, multò altiore quam latā, concentricè striatā, striis medio subobsoletis, ad latera profundioribus, lunulā oblongo-ovalē, concavè impressā; lacteā, nitente.*

THE SIMPLE ARTEMIS. Shell longitudinally ovate, much higher than broad, concentrically striated, striae rather obsolete in the middle, deeper at the sides, lunule oblong-ovate, concavely impressed; cream-coloured, shining.

HANLEY, Cat. Recent Shells, pl. xv. f. 41.

Hab. — ?

An interesting species belonging to the *A. concentrica* type, distinguished from all others by its longitudinally ovate form.

Fig. 27 b. (Mus. Metcalfe.)

This shell proves to be a variety of *A. Africana*, described at Pl. V.

Species 60. (Mus. Hanley.)

ARTEMIS TORRIDA. *Art. testā suborbiculāri, solidiusculā, concentricè acutè elevato-striatā, striis subdistantibus, areā ligamenti lanceolato-excavatā, lunulā sublatè cordatā, profundè impressā; sordidè albā.*

THE TORRID ARTEMIS. Shell nearly orbicular, rather solid, concentrically sharply elevatedly striated, striae rather distant, area of the ligament lanceolately excavated, lunule rather broadly cordate, deeply impressed; dead white.

Hab. Mouth of the River Gaboon, West Africa.

Concentrically sculptured with fine cord-like striae, after the manner of *A. Orbigny*.

Species 61. (Mus. Hanley.)

ARTEMIS LONGILUNATA. *Art. testā subquadrato-orbicu-*

lari, tenui, valdè compressâ, sub lente radiatim impresso-striatâ, concentricè creberrimè tenuistriatâ, striis ad latera paucioribus, elevatiusculis, subcorrugatis, areâ ligamenti latiusculâ, subplanulatâ, lunulâ peculiariter elongato-cordatâ; flavicante-albâ.

THE LONG-LUNULED ARTEMIS. Shell somewhat squarely orbicular, thin, very much compressed, radiately impressly striated beneath the lens, concentrically very closely finely striated, striae fewer in number at the

sides, slightly raised and corrugated, area of the ligament rather broad, a little flattened, lunule peculiarly elongately cordate; yellowish-white.
Hab. — ?

Approaching *A. penicillata* in form, but distinguished from it in detail of sculpture, and in the elongated extension of the lunule.

ARTEMIS.

	Plate.	Species.		Plate.	Species.
<i>Adansoni</i> , Philippi	V.	27	<i>Japonica</i> , Reeve	III.	17
<i>Africana</i> , Gray	V.	27	<i>juvenilis</i> (<i>Venus</i>), Gmelin	I.	5
<i>alata</i> , Reeve	IV.	20	<i>lamellata</i> , Reeve	III.	13
<i>Amphidesmoides</i> , Reeve	VIII.	48	<i>laminata</i> , Reeve	VII.	41
<i>anus</i> , Philippi	II.	10	<i>lincta</i> (<i>Venus</i>), Pulteney	I.	2
<i>aspera</i> , Reeve	IX.	49	<i>livida</i> , Phil.	VIII.	44
<i>australis</i> , Philippi	VI.	38	<i>longilunata</i> , Reeve	X.	61
<i>bilunulata</i> , Gray	IV.	22	<i>Lucinoides</i> , Reeve	VIII.	45
<i>bisoccta</i> , Reeve	IX.	55	<i>lunaris</i> (<i>Cyth.</i>), Lamarck	IX.	50
<i>Bruguieri</i> , Gray	IV.	23	<i>macilenta</i> , Reeve	IX.	51
<i>cælata</i> , Reeve	V.	28	<i>modesta</i> , Reeve	IX.	54
<i>carulca</i> , Reeve	IV.	25	<i>nanus</i> , Reeve	X.	57
<i>calculus</i> , Reeve	VIII.	47	<i>nitens</i> , Reeve	III.	12
<i>Chinensis</i> (<i>Venus</i>), Chemnitz	I.	6	<i>Orbigny</i> , Dunker	VIII.	44
<i>compta</i> , Löwen	I.	2	<i>Patagonica</i> , Philippi	VII.	40
<i>concentrica</i> (<i>Venus</i>), Gmelin	II.	8	<i>penicillata</i> , Reeve	VI.	32
<i>contusa</i> , Reeve	VII.	38	<i>plana</i> , Reeve	III.	18
<i>corrugata</i> , Reeve	IV.	24	<i>ponderosa</i> , Gray	I.	4
<i>cretacca</i> , Reeve	VI.	35	<i>prostrata</i> (<i>Venus</i>), Linn.	IV.	23
<i>Cumingii</i> , Reeve	V.	30	<i>radiata</i> , Reeve	VII.	37
<i>discus</i> , Reeve	II.	9	<i>rufa</i> (<i>Cyth.</i>), Lamarck	I.	3
<i>Dunker</i> , Philippi	VI.	34	<i>scabriuscula</i> , Philippi	III.	14
<i>duplicata</i> , Reeve	VIII.	46	<i>scalaris</i> (<i>Cyth.</i>), Menke	II.	11
<i>exasperata</i> , Philippi	IV.	21	<i>sculpta</i> , Hanley	IX.	52
<i>excisa</i> (<i>Venus</i>), Chemnitz	VII.	43	<i>sericea</i> , Reeve	VIII.	36
<i>exoleta</i> (<i>Venus</i>), Linn.	V.	29	<i>Sieboldii</i> , Reeve	VII.	39
<i>ferruginea</i> , Reeve	X.	56	<i>simplex</i> , Hanley	X.	59
<i>fibula</i> , Reeve	V.	26	<i>subquadrata</i> , Hanley	III.	15
<i>gigantea</i> , Sowerby	I.	4	<i>subrosea</i> , Gray	IV.	19
<i>glaucia</i> , Reeve	X.	58	<i>torrida</i> , Reeve	X.	60
<i>Gruneri</i> , Philippi	V.	31	<i>trigona</i> , Reeve	VII.	42
<i>hepatica</i> , Philippi	I.	7	<i>turgida</i> , Reeve	IX.	53
<i>incisa</i> , Reeve	III.	16	<i>variegata</i> (<i>Venus</i>), Chemnitz	VI.	33
<i>isocardia</i> , Dunker	I.	1			

ERRATA.

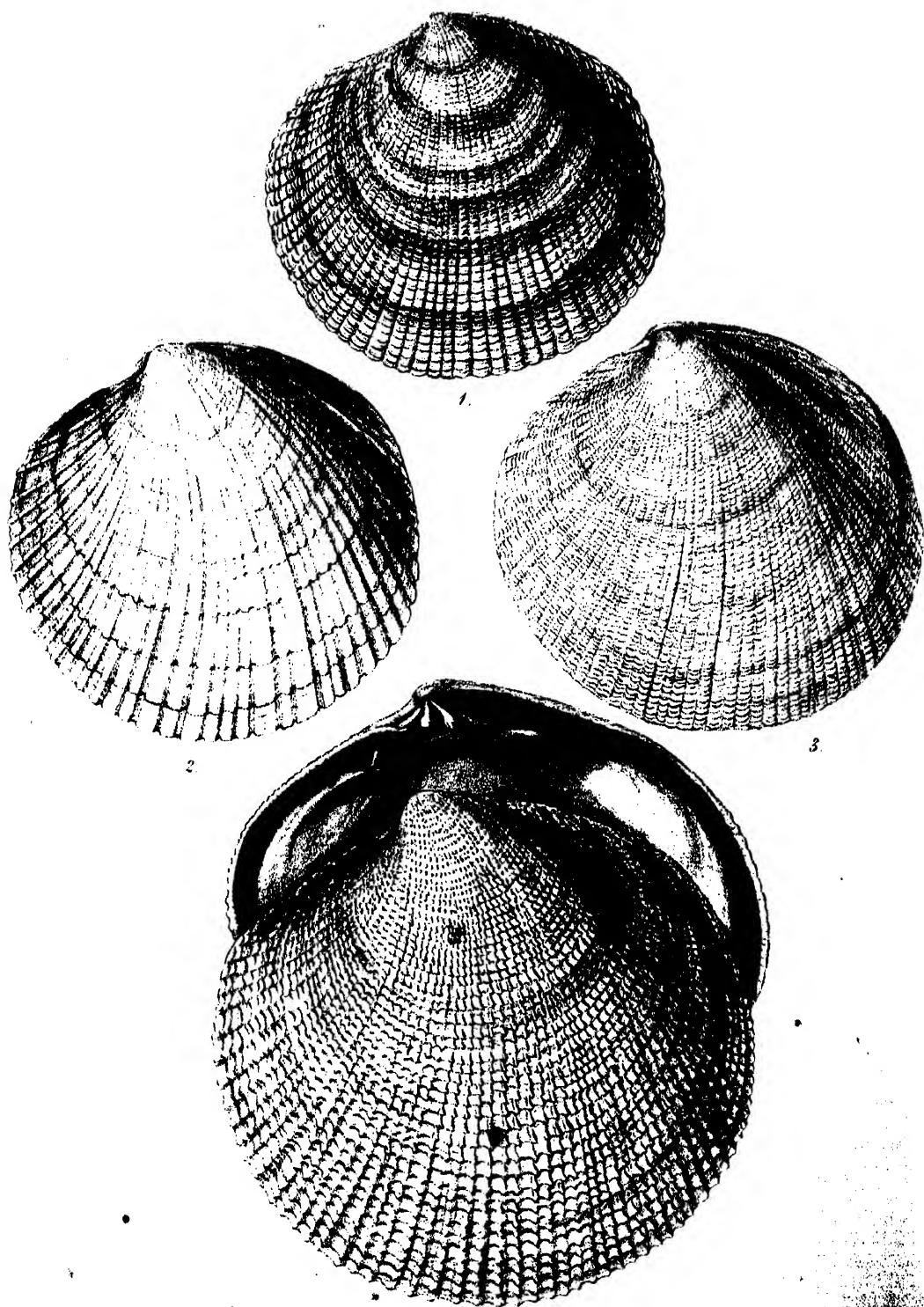
- Sp. 23. *A. prostrata*. Add as synonyme *A. Bruguieri*, Gray, *Analyst*, 1838, vol. viii. p. 309.
 Sp. 52. *A. sculpta*. Add authority, Hanley, *Catalogue of Recent Shells*, pl. xv. f. 42.

MONOGRAPH

OF THE GENUS

L U C I N A .

Wisdom and spirit of the universe,
Thou soul that art the eternity of thought,
That giv'st to forms and images a breath
And everlasting motion ;
Not with the mean and vulgar works of man,
But with high objects, with enduring things,
With life and nature.—*Wordsworth.*



LUCINA.

PLATE I.

Genus LUCINA, Bruguière.

Testa plerumque orbicularis, aut plana aut gibbosa, sæpius inæqualis et inæquilateralis, umbonibus parvis. Cardo variabilis, modo variè dentatus, modo edentatus. Impressiones musculares distantes, antica variè prolongata.

Shell mostly orbicular, either flattened or gibbous, most frequently equivalve and inequilateral, with the umbones small. Hinge variable, sometimes variously toothed, sometimes toothless. Muscular impressions distant, the anterior one variously prolonged.

The species referred to the genus *Lucina* in the following monograph, are a somewhat heterogeneous assemblage, comprehending ten or a dozen distinct types of form, each of which is characterized by a particular kind of hinge and external sculpture. Some of these forms have been regarded, and not improperly so, as separate genera, but all are alike distinguished in the interior of the shell by a prolongation of the anterior muscular scar. There are, moreover, few in which the internal surface of each valve is not peculiarly grooved, or striated, or punctured.

These sections of the genus are severally represented by the following species—*L. tigrina*, *Jamaicensis*, *Pennsylvanica*, *Philippina*, *borealis*, *dentifera*, *Childreni*, *pecten*, *divaricata*, *cornea*, and *rotundata*; and the structure of the hinge is regarded in each as a specific, not a generic character. The shell varies exceedingly in composition, being in some species extremely thin and fragile, whilst in others it is very stout; it is, however, somewhat remarkable for the absence of external colour or painting.

In the first type, *L. tigrina* (Genus *Codakia*, Scopoli), the shell is characterized by an elaborate decussated sculpture, and the valves are mostly red-coloured about the interior margin; *L. Jamaicensis* represents a group (Genus *Phacoides*, De Blainville) in which the shell is only concentrically sculptured, and allied to this in form are the groups typified by *L. Pennsylvanica* and *dentifera*, the former being distinguished in form and by a peculiar horny epidermal coat, the latter by having the concentric ridges serrated and scaled. In *L. Childreni* the shell is remarkably inequivalve; in *L. pecten* and its congeners it is variously radiately sculptured; and in *L. divaricata* and allied species (Genus *Strigella*, Turton), the external surface of the valves is variously rippled, so to speak, with wavy diverging lines. The shell of *L. borealis* (Genus *Triodonta*, Schumacher) is of a rounded solid

growth, very closely concentrically sculptured. In all these the hinge approximates more or less to the *Venus* type, with sometimes the addition of remote lateral teeth, though in one or two species all teeth are obsolete; but in the very characteristic group typified by *L. Philippina*, most generically distinct of all, the shell is very gibbous, thin, and always toothless, the hinge being strengthened, in the absence of teeth, by a different position of the ligament, which forms a broad strap, as it were, across the dorsal margins of the valves. The hinge of *L. rotundata* and several other species (Genus *Diplodonta*, Bronn) is remarkable for an erect bifid tooth, and in *L. cornea* and its allies, also very generically distinct, the shell differs from all the preceding types in being smooth with a polished horny epidermis of a dark olive colour. The lunule of the shell in most of these groups is curious, in belonging more to one valve than to the other. The shell, instead of opening through the centre of the lunule, as in *Artemis*, opens mostly on one side of the lunule.

Of seventy *Lucinae* here described, the localities are known of about fifty. Ten species inhabit the seas of Europe, ten are from the Philippine Islands, *L. borealis* being found in both these localities, eight inhabit the West Indies, seven the west coast of Central America, and the remainder are from the Bay of Honduras, North Australia, New Zealand, Red Sea, Senegal, Brazil, Panama, China, and Peru. In noticing the geographical distribution of the genus, the chief circumstances to be remarked are, firstly, that the beautiful type represented in the Bay of Honduras by *L. tigrina* and *exasperata*, appears at Torres Straits, North Australia, in *L. interrupta*, and at Panama in *L. punctata*; and, secondly, that the characteristic form *L. Pennsylvanica* from Jamaica, is represented at Senegal, on the west coast of North Africa, by *L. columbella*, and on the opposite side of the continent, on the shores of the Red Sea, by *L. speciosa*. The European species have little or no typical relation, and none of the types of the genus appear to have any particular local character.

Species 1. (Mus. Cuming.)

LUCINA RUGIFERA. *Luc. testâ ovalâ, longiore quam altâ, compressiusculâ, radiatim subobscurè sulcatâ, liris concentricis corrugatis undique conspicuè exsculptâ, sulcis radiantibus ad latera subprofundis; lacteâ, pallidè spadiceo concentricè fasciatâ.*

THE WRINKLED LUCINA. Shell ovate, longer than high, rather compressed, radiately somewhat obscurely grooved, and conspicuously sculptured throughout with concentric wrinkled ridges, radiating grooves rather deep at the sides; cream-colour, concentrically banded with light fawn-colour.

REEVE, *Proc. Zool. Soc.* 1835, p. 68.

Hab. — ?

This species is characterized by light fawn bands, more or less obscure, upon a dark cream-coloured ground; and the sculpture has a peculiar wrinkled aspect.

Species 2. (Mus. Cuming.)

LUCINA PUNCTATA. *Luc. testâ suborbiculari, convexâ, levigatâ, radialim sulcatâ, sulcis angustis, linearibus, plus minus distantibus, ad latera numerosis, confertioribus, valvis intus punctatis; albâ, intus lutescente, margine vividè roseâ.*

THE PUNCTURED LUCINA. Shell nearly orbicular, convex, smooth, radiately grooved, grooves narrow, linear, more or less distant, numerous and closer at the sides, valves punctured within; white, yellowish within, deep rose round the edge.

Lucina punctata, Linnaeus, *Syst. Nat.* (12th edit.) p. 1134.

Cytherea punctata, Lamarck.

Lucina punctata, Deshayes.

Hab. Panama (in sand at low water); Cuming.

Distinguished by its smooth surface and narrow radiating grooves, whilst each valve is conspicuously punctured in the interior.

Species 3. (Mus. Cuming.)

LUCINA TIGERINA. *Luc. testâ oblongo-ovalâ, longiore quam altâ, plano-convexâ, radialim multisulcatâ, liris concentricis undique creberrimè decussatâ; intus extusque albâ.*

THE GRAINED LUCINA. Shell oblong-ovate, longer than high, flatly convex, radiately many-grooved, very closely decussated throughout with concentric ridges; white within and without.

Lucina tigrina, Linnaeus, *Syst. Nat.* (12th edit.) p. 1133.

Cytherea tigrina, Lamarck.

Lucina tigrina, Deshayes.

Hab. Bay of Honduras; Dyson.

This and the following species have been mostly confounded together under the head of *L. tigrina*.

Species 4. (Mus. Cuming.)

LUCINA EXASPERATA. *Luc. testâ suborbiculari, convexâ, sulcis concentricis et radiantibus undique creberrimè decussatâ, liris intermediis muricato-nodulosis; albâ, margine interno roseâ.*

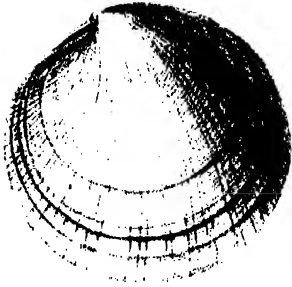
THE SHARP LUCINA. Shell nearly orbicular, convex, very closely decussated throughout with concentric and radiating grooves, the interstitial ridges being prickly-noduled; white, margin rose within.

Hab. Bay of Honduras; Dyson.

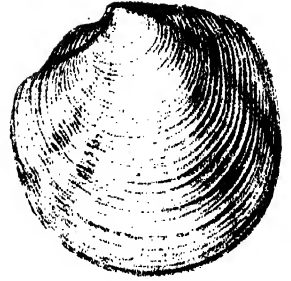
This well-known shell, which is Lamarck's *Cytherea tigrina* var. 3, is certainly distinct from that just described, which he makes the type of the species.



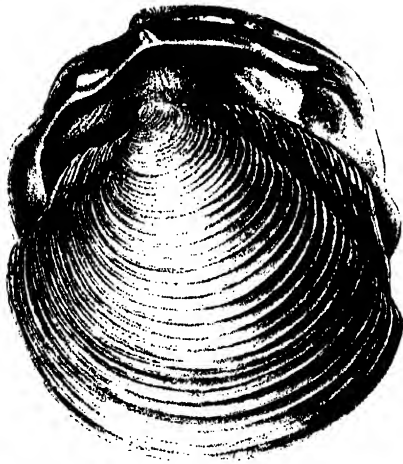
5 a



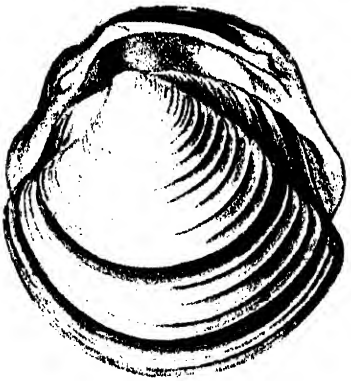
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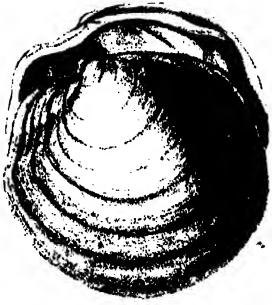
6.



7 a



7 b.



9



8.

LUCINA.

PLATE II.

Species 5. (Fig. a, b, Mus. Cuming.)

LUCINA INTERRUPTA. *Luc. testā orbiculari, convexā, solidiuculā, concentricē creberrimē tenuilicatā, liris brevibus, obtusis, lineis impressis inæquidistantibus ad latera ab umbonibus promiscuē radiatā, lunulā parvā, cordatā, subprofundē excavatā; albā, prope cardinem utrinque rosā, intus vividē luteā.*

THE INTERRUPTED LUCINA. Shell orbicular, convex, rather solid, concentrically very closely finely ridged, ridges short, obtuse, promiscuously rayed at the sides with inequidistant impressed lines, lunule small, heart-shaped, rather deeply excavated; white, rose on both sides near the hinge, bright yellow interiorly.

Cytherea interrupta, Lamarck, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 318.

Hab. Buoly Island, Torres Straits; Jukes.

A delicately sculptured species, belonging to the same type as those of the preceding plate, and similarly rose-coloured on either side of the hinge.

M. Deshayes is mistaken in supposing this to be a variety of *L. tigerina*, from Senegal.

Species 6. (Mus. Cuming.)

LUCINA ARGENTEA. *Luc. testā suborbiculari, convexo-depressā, ad latera vix angulatā, tenuiculā, concentricē acutē tenuilicatā, liris inæquidistantibus, interstitiis radiatim eximie corrugatis, cardinis dentibus callosis, subobsoletis; intus extusque subpellucido-albā.*

THE SILVERY LUCINA. Shell nearly orbicular, convexly depressed, scarcely angled at the sides, rather thin, concentrically sharply finely ridged, ridges inequidistant, interstices radiately delicately corrugate, teeth of the hinge callous, almost obsolete; semitransparent white within and without.

Hab. Moluccas.

A flattened semipellucid silver-white shell very regularly concentrically sculptured.

Species 7. (Fig. a, b, Mus. Cuming.)

LUCINA JAMAICENSIS. *Luc. testā suborbiculari, compressā, ad latera ab umbonibus excavato-angulatā, concentricē lamellatā, lamellis brevibus subdistantibus, car-*

dinis dentibus centralibus ferē obsoletis, lateralibus prominentibus, compressis, erectis; fuscescente-lacteā, intus vividē rufescente-croceā, interdum, autem rarē, intus extusque albā.

THE JAMAICA LUCINA. Shell nearly orbicular, compressed, excavately angled from the umboes at the sides, concentrically lamellated, lamellæ short, rather distant, central teeth of the hinge almost obsolete, lateral teeth prominent, compressed, erect; brownish cream-colour, bright reddish-saffron in the interior, sometimes, but rarely, white within and without.

Venus Jamaicensis, Chemnitz, Conch. Cab. vol. vii. p. 24. pl. 38. f. 408-9.

Lucina Jamaicensis, Lamarck.

Hab. Jamaica; Gosse.

This well-known species was called by the early French conchologists, the Apricot, after the rich colouring of the interior; there is, however, a well-marked white variety, such as that represented at Fig. 7 b, and which is mostly smaller in size.

Species 8. (Mus. Cuming.)

LUCINA BICORNIS. *Luc. testā globoso-orbiculari, ventricosā, ab umbonibus utrinque leviter excavatā, concentricē tenuistriatā, rugosā, lunulā cordatā, conspicuē excavatā, cardine dente unico centrali, parvā, duobus lateralibus compressis, prominentibus, erectis; fuscescente-lacteā, intus rufescente-croceo pallidē tinctā.*

THE TWO-HORNED LUCINA. Shell globosely orbicular, ventricose, slightly excavated on both sides from the umboes, concentrically finely striated, rough, lunule cordate, conspicuously excavated, hinge with a small single central tooth, and two prominent compressed erect lateral ones; brownish cream-colour, faintly tinged with reddish saffron-colour within.

Hab. Island of Ticao, Philippines (in fine coral sand at low water); Cuming.

Very similar to the following species, except in having two strongly developed lateral teeth.

Species 9. (Mus. Cuming.)

LUCINA EDENTULA. *Luc. testā orbiculari, tenuiculā, ventricosā, ab umbonibus utrinque superficialiter excavatā,*

LUCINA.—PLATE II.

concentricè subtiliter et densissimè striatâ, cardine edentulo; semipellucido-albâ, intus rufescente-croceâ.

THE TOOTHLESS LUCINA. Shell orbicular, rather thin, ventricose, superficially excavated from the umboes on both sides, concentrically finely and very thickly striated, hinge toothless; semitransparent white, reddish-saffron in the interior.

Venus edentula, Chemnitz, Conch. Cab. vol. vii. p. 34. pl. 40. pl. f. 427-9.

Lucina edentula, Lamarck.

Hab. Jamaica.

Similarly coloured in the interior to *L. Jamaicensis*, from which it differs in being of a rounder and more ventricose form. The sculpture consists merely of crowded concentric striæ.

The name *Venus edentula* originated with Linnæus, but it is impossible to determine what species the description was intended to refer to. Dr. Philippi thinks that the species represented at Pl. V. Fig. 23, is the Linnæan *V. edentula*, but it does not appear so to me.



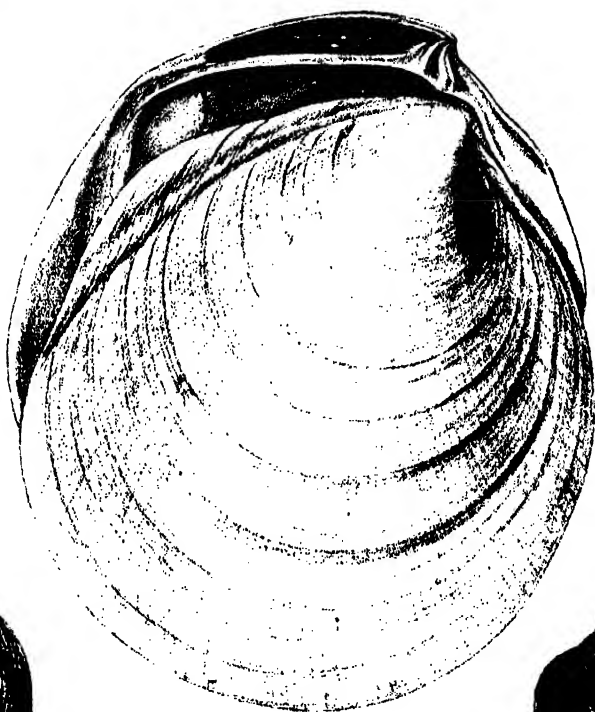
10 a



10 b



11



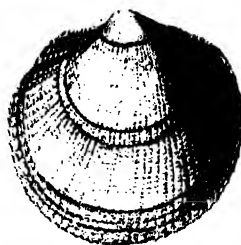
12



13



14



15

LUCINA.

PLATE III.

Species 10. (Fig. *a, b*, Mus. Cuming.)

LUCINA DENTIFERA. *Luc. testā trigono-orbiculari, convexo-depressā, ad latera latē sulcatā, subangulatā, concentricē lamellatā, lamellis distantibus, tenuibus, erectis, margine pulcherrimē serratis, ad latus posticum conspicuē squamatis; albā, epidermide tenuissimā cornedā indutā.*

THE FINE-TOOTHED LUCINA. Shell triangular-orbicular, convexly depressed, broadly grooved at the sides, slightly angulated, concentrically lamellated, lamellae distant, thin, erect, very beautifully serrated at the edge, conspicuously squamate on the posterior side; white, covered with a very thin horny epidermis.

JONAS, Philippi, Abbild. und Besch. Conch. vol. ii. p. 206.
Luc. pl. 1. f. 4.

Hab. Suez, Red Sea.

Distinguished by the beautifully serrated border of the laminae, which are conspicuously developed in erect scales along the posterior margin.

Species 11. (Mus. Cuming.)

LUCINA SIMPLEX. *Luc. testā orbiculari, convexā, tenuiculā, subaequilatā, posticē subobsoletē flexuoso-angulatā, concentricē regulariter creberrimē elevato-striatā, lineis subtilibus radiantibus densē irregulariter sculptā; albā.*

THE SIMPLE LUCINA. Shell orbicular, convex, rather thin, nearly equilateral, somewhat obsoletely flexuously angulated on the posterior side, concentrically regularly very closely elevately striated, and thickly irregularly scratched with fine radiating lines; white.

Hab. North Australia; Jukes.

Very simply concentrically sculptured with striae after the manner of fine ridges, and, upon examination with the lens, is found to be rayed with scratches.

Species 12. (Mus. Cuming.)

LUCINA CHILDRENI. *Luc. testā subamplicā, elliptico-orbiculari, umbones versus attenuatā, inequilatā, posticē flexuoso-angulatā, valvā alterā planā, alterā convexā, densissimē concentricē striatā, striae numerosis subtilibus impressis radiantibus decussatā, cardinis dentibus centralibus duobus divaricatis prominentibus, lateralibus callois, subobsoletis; intus eoque albā.*

CHILDREN'S LUCINA. Shell rather large, elliptically orbicular, attenuated towards the umbones, inequilateral, flexuously angled posteriorly, one valve flat, the other convex, very thickly striated concentrically, decussated with numerous fine impressed radiating striae, central teeth of the hinge two in number, prominent, divaricate, lateral teeth callous, nearly obsolete; white within and without.

GRAY, Zool. Journ. vol. i. p. 221.

Hab. Brazil.

In this fine species sometimes the right valve, sometimes the left is the flat one, the opposite valve in either case being convex.

Species 13. (Fig. 13 and 14, Mus. Cuming.)

LUCINA BOREALIS. *Luc. testā suborbiculari, vix inequilatā, solidiusculā, plus minus ventricosā, posticē obsoletē flexuoso-excavatā, anticē subangulatā, plus minus productā, subrostratā, concentricē filoso-liratā; sordidē albā, epidermide fuscescente indutā.*

THE NORTHERN LUCINA. Shell nearly orbicular, but little inequilateral, rather solid, more or less ventricose, obsoletely flexuously excavated on the posterior side, somewhat angularly inclined, produced, and subrostrate anteriorly, concentrically sculptured with thread-like ridges; dead white, covered with a brownish epidermis.

Venus borealis, Linnæus, Syst. Nat. 12th. edit. p. 1413.

Lucina borealis, Forbes and Hanley.

Tellina radula, Montagu.

Lucina radula, Lamarck.

Testa junior. *Lucina alba*, Turton.

Hab. Northern Europe and the British Isles. Massachusetts, United States; Gould. Bay of Manila, Island of Luzon, Philippines; Cuming.

The *Lucina borealis* has a much wider geographical range than has been hitherto supposed. The shell Fig. 13 represents the British state of the species, stout and somewhat globose, dredged at Scarborough; and that at Fig. 14, more depressed, with the anterior side slightly rostrate, is its eastern analogue, collected by Mr. Cuming in the Bay of Manila, where it is not uncommon.

Species 15. (Mus. Cuming.)

LUCINA VENUSTA. *Luc. testā subgloboso-orbiculari, ventricosa, subequilaterā, radiatim multicosatā, costis tenuibus, numerosis, in parte medio anticā subobsoletis, lineis transversis impressis undique undulato-sculptis, lunulā oblongā, cardinis dentibus centralibus subprominentibus, lateralibus parvis subobsoletis; albā.*

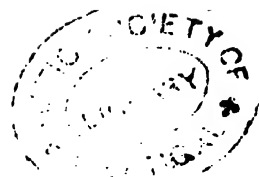
THE GRACEFUL LUCINA. Shell somewhat globosely orbicular, ventricose, nearly equilateral, radiately many-ribbed, ribs fine, numerous in the part anterior

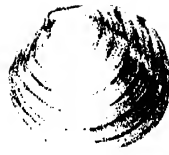
to the middle, rather obsolete, undulately sculptured throughout with transverse impressed lines, lunule oblong, central teeth of the hinge rather prominent, lateral teeth small, nearly obsolete; pure white.

PHILIPPI, Abbild. und Besch. Conch. vol. ii. p. 206. *Luc.* pl. 1. f. 2.

Hab. Bay of Manila (sandy mud, shallow water); Cuming.

An elaborately carved ventricose shell, perfectly white, without any indication of colouring, and with very much the aspect of a *Cardium*.

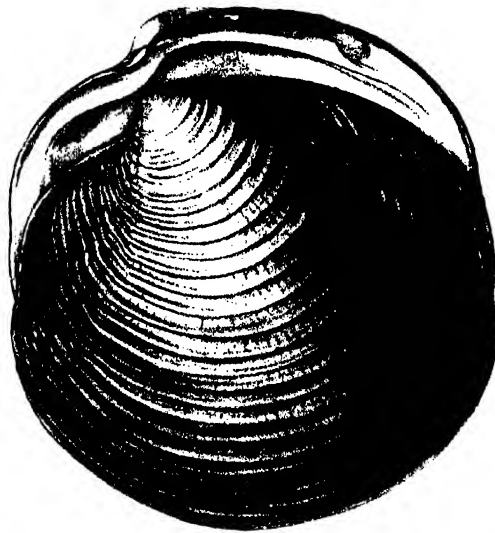




16. a.



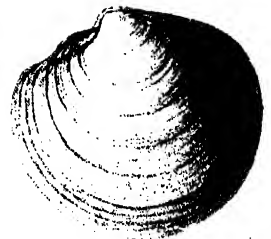
17.



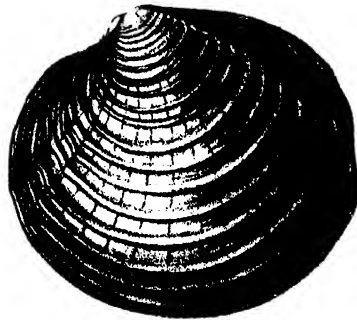
18. a.



19.



20.



18. b.

LUCINA.

PLATE IV.

Species 16. (Fig. a and b, Mus. Cuming.)

LUCINA BARBATA. *Luc. testâ orbiculari, planulatâ, inequilateralâ, posticè excavato-angulatâ, lævigatâ, lineis incrementi subrudè notatâ, lunulâ lanceolato-cordatâ, profunde excavatâ, dentibus callosis, subobsoletis; semipellucido-albâ, epidermide fibrosâ hic illic indutâ.*

THE BEARDED LUCINA. Shell orbicular, rather flattened, inequilateral, posteriorly excavately angled, smooth, rather rudely marked with lines of growth, lunule lanceolately heart-shaped, deeply excavated, teeth callous, somewhat obsolete; semitransparent white, covered here and there with a fibrous epidermis.

Hab. — ?

The light fibrous epidermis of this species is a very characteristic feature.

Species 17. (Mus. Cuming.)

LUCINA ANNULATA. *Luc. testâ orbiculari, subplanulatâ, inequilateralâ, concentricè laminato-liratâ, liris acutis, erectis, interstitiis concentricè striatis, lunulâ lanceolato-ovata, subprofunde excavatâ; semipellucido-albâ.*

THE ANNULATED LUCINA. Shell orbicular, rather flattened, inequilateral, concentrically laminately ridged, ridges sharp, erect, interstices concentrically striated, lunule lanceolately ovate, rather deeply excavated; semitransparent white.

Hab. California ?

A thin delicate blue-white shell, sculptured with sharp circular ridges.

Species 18. (Mus. Cuming.)

LUCINA PHILIPPINARUM. *Luc. testâ orbiculari, viz inequilateralâ, posticè excavato-angulatâ, concentricè liratâ, liris minutis, corrugatis, nunc distantibus, nunc numerosis, concentricè liratis, interstitiis concentricè elevato-striatis, lunulâ vix nullâ, cardine dentibus centralibus nullis, interstitibus callosis, fere obsolete; albâ, liris, posticè, ferecentibus ab umbonibus radiantibus pallidis, hic illic epidermide lacteâ indutâ, umbonibus plus minusve opacis.*

THE PHILIPPINE LUCINA. Shell orbicular, inequilateral, posteriorly

ridged, ridges rather sharp, corrugate, now distant, now numerous and closer, interstices between the laminae concentrically sculptured with raised striae, scarcely any lunule, hinge destitute of central teeth, lateral teeth callous, almost obsolete; white, faintly marked with fine brownish lines, radiating from the umboes, covered with a cream-coloured epidermis, umboes more or less eroded.

HANLEY, Species of Shells.

Hab. Bay of Manila and Singapore (in sandy mud at the roots of Mango-trees); Cuming.

This fine species, with its irregular corrugate sculpture, epidermis, and eroded umboes, has externally the general aspect of a *Cyrena*.

Species 19. (Mus. Cuming.)

LUCINA ANATELLINOIDES. *Luc. testâ transversè ovatâ, tenuiculâ, viz inequilateralâ, anticè subrostratâ, posticè obsolete excavato-angulatâ, minutissimè decussatim striatâ, lunulâ parvâ, lanceolato-oblongâ; albâ.*

THE ANATINELLA-LIKE LUCINA. Shell transversely ovate, rather thin, scarcely inequilateral, anteriorly subrostrate, posteriorly obsolete excavately angled, very minutely decussately striated, lunule small, lanceolately-oblong; whitish.

Hab. West Indies.

Distinguished by its *Anatinella*-like form. The interior of the shell has some slight tinge of colouring.

Species 20. (Mus. Cuming.)

LUCINA SULCATA. *Luc. testâ orbiculari, depressiusculâ, anticè subconspicuè excavato-angulatâ, concentricè irregulariter acutè sulcatâ, lunulâ parvâ; semipellucido-*

THE GROOVED LUCINA. Shell orbicular, rather depressed, anteriorly rather conspicuously excavately angulated, concentrically irregularly sharply grooved, lunule small; semitransparent white.

Hab. — ?

Though a pellucid white shell, it is of rather solid substance, very closely sharply grooved throughout.

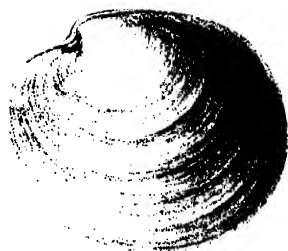




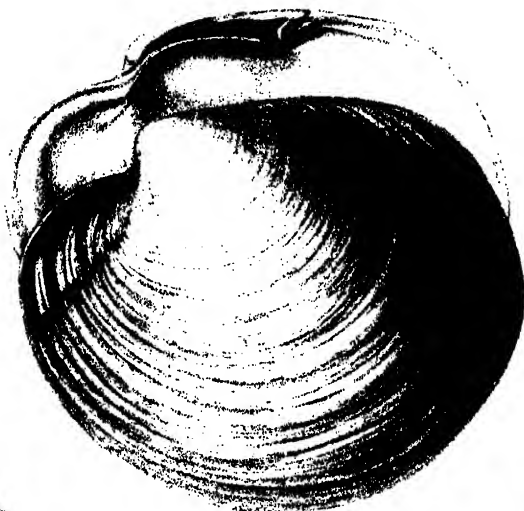
21.



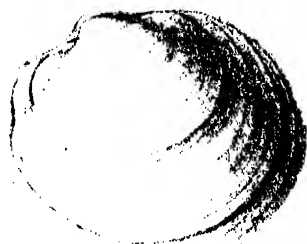
22.



23. a.



23. b.



24.



25.



26.

LUCINA.

PLATE V.

Species 21. (Mus. Cuming.)

LUCINA OVUM. *Luc. testā transversè ovatā, tenui, ventricosā, inequilateralē, anticè subrostratā, concentricè tenuissimè superficialiter striatā, lunulā lanceolato-cordatā, vix concavā, cardine tenui, edentulā; albā.*

THE EGG LUCINA. Shell transversely ovate, thin, ventricose, inequilateral, subrostrate anteriorly, conspicuously very thinly superficially striated, lunule lanceolately cordate, but little concave, hinge thin, toothless; white.

Hab. Island of Burias, Philippines (in coarse sand at the depth of four fathoms); Cuming.

The *Lucina* represented at Fig. 21 to 24 belong to a peculiar type, of which the shell is very thin and ventricose, without colour or pattern of sculpture, the hinge toothless, and the ligament developed internally across the posterior dorsal junction of the valves.

Species 22. (Mus. Cuming.)

LUCINA TUMIDA. *Luc. testā suborbiculari, globosā, inequilateralē, tumidā, tenuissimā, anticè subrostratā, concentricè subtilissimè superficialiter striatā, striis impressis radiantibus exiliter decussatā, lunulā ovato-cordatā, vix impressā, cardine edentulā; albā.*

THE SWOLLEN LUCINA. Shell nearly orbicular, globose, inequilateral, swollen, very thin, subrostrate anteriorly, concentrically very finely superficially striated, faintly decussated with radiating impressed striae, lunule ovately cordate, but little impressed, hinge toothless; white.

Hab. —?

More globose and swollen than the former, lunule broader, and faintly rayed throughout with impressed striae.

Species 23. (Fig. a, b, Mus. Cuming.)

LUCINA PHILIPPIANA. *Luc. testā transversè orbiculari, valdè inequilateralē, tenuiculā, inflatā, concentricè rugoso-striatā, corrugatā, lunulā vix nullā; luteā, epidermide fuscescente ad latēra et verum marginem ventralem indutā.*

PHILIPPI'S LUCINA. Shell transversely orbicular, very

inequilateral, rather thin, inflated, concentrically, roughly striated, wrinkled, scarcely any lunule; cream-colour, covered at the sides and towards the ventral margin with a light brown epidermis.

Lucina edentula, Philippi (not of Lamarck).

Hab. —?

Dr. Philippi considers that this is the species originally described by Linnæus as *Venus edentula*; I do not, however, concur with this opinion. The term "subdiaphanā," from the Linnæan description in Mus. Ludov. Ulric. reg. p. 508, will not apply to the shell under consideration, which is of rather an opaque white, more or less covered with epidermis. The description being very indefinite throughout, and applicable to half a dozen species, I have retained the name "*edentula*" for that which is undoubtedly the species so acknowledged by Chemnitz and Lamarck.

Species 24. (Mus. Cuming.)

LUCINA PILA. *Luc. testā suborbiculari, tenui, inflatā, valdè globosā, subaequilateralē, concentricè rugoso-striatā, lunulā ovatā; impresso-concavā; sordide albā, epidermide tenui marginem ventralem versus indutā.*

THE BALL LUCINA. Shell nearly orbicular, thin, inflated, extremely globose, nearly equilateral, concentrically roughly striated, lunule ovate, impressly concave; dead white, covered with a thin epidermis towards the ventral margin.

Hab. —?

Distinguished by its very globose form and hollow lunule.

Fig. 25. (Mus. Cuming.)

The shell here figured proves to be a globose variety of *L. edentula*.

For Sp. 25, see Pl. IX.

Species 26. (Mus. Cuming.)

LUCINA MALUM. *Luc. testā suborbiculari, latiore quam albā, ventricosā, anticè leviter excavatā, deinde subrostratā, concentricè creberrimè acutè striato-liriatā, lunulā latè ovatā, concavā; semipellucido-albā, intus vividā.*

LUCINA.—PLATE V.

THE GOLDEN-APPLE LUCINA. Shell nearly orbicular, broader than high, ventricose, slightly excavated anteriorly, then subrostrate, concentrically very closely sculptured with sharp striae-like ridges, lunule broadly ovate, concave; semitransparent-white, brightly stained within with reddish saffron-colour.

Hab. Island of Ticao, Philippines.

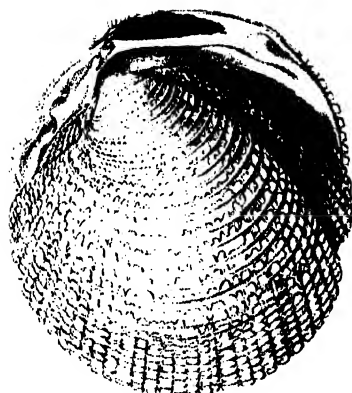
This very delicate and richly-coloured species is distinguished from *L. edentula*, to which it is nearest allied, by its conspicuous broadly ovate lunule.



27.



27.6



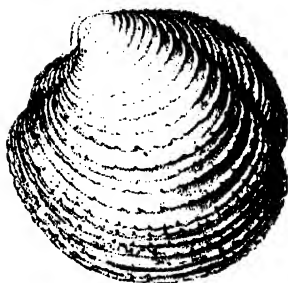
29.



30.



31.



32.

LUCINA.

PLATE VI.

Species 27. (Fig. a, b, Mus. Cuming.)

LUCINA CELATA. *Luc. testâ globosâ, crassiusculâ, tumidâ, concentricè striatâ, peculiariter undato-celatâ et erosâ, cardine dentibus centralibus duabus angustis, quarum unâ prominulâ erectâ bifidâ in utrâque valvâ; albâ.*

THE CARVED LUCINA. Shell globose, rather thick, swollen, concentrically striated, peculiarly carved and eroded in a waved manner, hinge composed of two central teeth, one of which is rather prominent, erect, and bifid in each valve; white.

Hab. Island of Muerte, Bay of Guayaquil (dredged from a depth of about eleven fathoms); Cuming.

This is a remarkable shell, and belongs apparently to the genus *Diplodonta*, of which our British *Lucina rotundata* is the type; it has, however, the narrow oblong posterior muscular scar. The hinge is characterized by a peculiar erect bifid tooth, and externally the valves are carved with a curious zigzag pattern upon an opaque eroded ground.

Species 28. (Mus. Cuming.)

LUCINA VIRGO. *Luc. testâ subquadrato-orbiculari, crassâ, solidâ, posticè sulco conspicuè excavatâ, anticè lunulâ amplâ latè cordatâ impressâ, concentricè subtiliter lirâtâ, liris tenuibus, membranaceis; semipellucidâ albâ, epidermide tenui corneâ indutâ.*

THE VIRGIN LUCINA. Shell somewhat squarely orbicular, thick, solid, posteriorly conspicuously excavated with a groove, anteriorly with a large broadly cordate impressed lunule, concentrically very finely ridged, ridges thin, membranaceous; semi-transparent white, covered with a thin horny epidermis.

Hab. —?

Resembling *L. columbella*, but more depressed, and characterized by a simple, and therefore different sort of epidermis. From *L. Pennsylvanica* it differs in having a broader cordate lunule.

Species 29. (Mus. Cuming.)

LUCINA PENNSYLVANICA. *Luc. testâ subquadrato-orbiculari, crassâ, solidâ, posticè sulco conspicuè excavatâ,*

anticè lunulâ amplâ oblongo-cordatâ impressâ, concentricè subtiliter lirâtâ, liris tenuibus, membranaceis; albâ, epidermide tenui corneâ, liras super hic illic peculiariter quadrato-squamulâ, indutâ.

THE PENNSYLVANIAN LUCINA. Shell somewhat squarely orbicular, thick, solid, conspicuously excavated on the posterior side with a groove, anteriorly with an oblong-cordate impressed lunule, concentrically very finely ridged, ridges thin, membranaceous; white, covered with a thin horny epidermis, which is peculiarly quadrate-squamate here and there.

Venus Pennsylvanica, Linnæus, Syst. Nat. p. 1134.

Lucina Pennsylvanica, Lamarek.

Hab. Jamaica; Gosse.

This species presents a singular appearance, from the circumstance that the horny epiderm, composing the concentric ridges, turns over here and there towards the umboes in scales, which are mostly square, and look like solid particles deposited in the interstices.

It is very much to be doubted whether the *Lucina Pennsylvanica* really inhabits the shores from whence it derives its name; should that not be the case I would propose to call it *L. grandinata*. The specimen here figured was collected by Mr. Gosse, at Jamaica.

Species 30. (Mus. Cuming.)

LUCINA COLUMBELLA. *Luc. testâ globosâ, crassissimâ, solidâ, posticè sulcato-excavatâ, anticè lunulâ peramplâ cordatâ impressâ, concentricè multilirâtâ, liris brevibus subobtusis; albâ, epidermide crassâ arcuè lirâtâ indutâ.*

THE LITTLE DOVE LUCINA. Shell globose, very thick, solid, posteriorly sulcately excavated, anteriorly impressed with a very large cordate lunule, concentrically many-ridged, ridges short and rather obtuse; white, covered with a thick compactly-ridged epidermis.

LAMARECK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 230.

Lucina Adamsoni, D'Orbigny.

Hab. Canary and Cape de Verd Islands. Senegal.

In this species the epidermis is formed on the ridges in stout closely-compacted strips.

Species 31. (Mus. Cuming.)

LUCINA AURANTIA. *Luc. testā subquadrato-orbiculari, tumidā, crassissimā, solidā, posticē sulcato-excavatā, anticē lunulā amplā laticordatā impressā, concentricē obscurē liratā, liris tenuibus, subrudibus, irregularibus; albā, margines versus intus extusque vividē rufescente-aurantiā, epidermide viz nullā.*

THE ORANGE-TINGED LUCINA. Shell somewhat squarely orbicular, swollen, very thick, solid, posteriorly sulcately excavated, anteriorly impressed with a large broadly cordate lunule, concentrically obscurely ridged, ridges thin, rather rude and irregular; white, bright reddish-orange within and without towards the margins, with scarcely any epidermis.

DESHAYES, Anim. sans. vert. vol. vi. p. 236.

Hab. West Indies.

In form this species is very similar to the preceding, wanting its characteristic epidermis.

Species 32. (Mus. Cuming.)

LUCINA SPECIOSA. *Luc. subquadrato-orbiculari, crassā, depressiusculā, posticē sulcato-excavatā, anticē lunulā amplā elongato-cordatā impressā, concentricē liratā, liris tenuibus, membranaceis; albā, epidermide corneā indutā.*

THE HANDSOME LUCINA. Shell somewhat squarely orbicular, thick, rather depressed, posteriorly sulcately excavated, anteriorly impressed with a large elongately cordate lunule, concentrically ridged, ridges thin, membranaceous; white, covered with a horny epidermis.

Hab. Red Sea.

The epiderm ridges of this beautiful species are not turned back towards the umboes as in *L. Pennsylvanica*, but incline forwards. In other respects it bears a very close resemblance to that species, which, as coming from so remote a locality, is extremely curious.



33.



35. a



36



37.



38. a



39



40.



39. b.

LUCINA.

PLATE VII.

Species 33. (Fig. 33, 37, and 38 a, b, Mus. Cuming.)

LUCINA FIBULA. *Luc. testâ suborbiculari, umbones versus anticè inclinatâ, depresso-convexâ, radiatim tenui-costatâ, costis obtusis, ad latera divaricatis, striis concentricis elevatis creberrimè et subtilissimè decussatis; albidâ, interdum roseâ aut flavicante.*

THE BUTTON LUCINA. Shell nearly orbicular, inclined anteriorly towards the umbones, depressly convex, radiately finely ribbed, ribs obtuse, divaricate at the sides, very closely and finely decussated with concentric raised striæ; whitish, sometimes pink or yellowish.

Hab. St. Elena, West Columbia (from sandy mud at a depth of about six fathoms); and Islands of Burias and Ticao, Philippines (in sandy mud at low water); Cuming.

The seven allied varieties represented in this plate belong to two species, the present of which differs mainly from the following in the extreme lateral ribs divaricating off from the plan of radiation.

Species 34. (Fig. 34 and 35 a, b, Mus. Cuming.)

LUCINA PECTEN. *Luc. testâ transversè orbiculari, depresso-convexâ, radiatim tenui-costatâ, costis obtusis, interdum duplicatis, striis elevatis creberrimè squamato-decussatis; albidâ.*

THE COMB LUCINA. Shell transversely orbicular, depressly convex, radiately finely ribbed, ribs obtuse, sometimes duplicate, very closely squamately decussated with raised striæ; whitish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 230.

Hab. Island of St. John, West Indies; Hartvig. Lord Hood's Island (in the crevices of wells); Cuming.

More depressed and rather more transversely orbicular than the *L. fibula*, whilst the extreme lateral ribs do not divaricate off as in that species.

For Sp. 35, 37, and 38, see Pl. X.

(Species 36. Mus. Cuming.)

LUCINA ROTUNDATA. *Luc. testâ transversè subquadratâ, tumulâ, valdè inequilateralâ, lævigatâ, lineis incrementi hic illic notatâ, lateribus simplicibus, lunulâ nullâ,*

cardine dentibus centralibus duabus, quarum unâ bifidâ in utrâque valvâ; albidâ, epidermide tenui partim indutâ.

THE ROUNDED LUCINA. Shell transversely subsquare, swollen, very inequilateral, smooth, marked here and there with lines of growth, sides simple, no lunule, hinge with two central teeth in each valve, one of which is bifid; whitish, partially covered with a thin epidermis.

TURTON, Conch. Dythyra Brit. p. 114. pl. 7. f. 3.

Psammobia rotundata, Fleming.

Diplodonta rotundata, Philippi.

Eadem. *Diplodonta dilatata*, Philippi.

Hab. Mediterranean and Southern shores of Britain.

This species, having no ribs, lunule, or lateral excavation, is far removed in external character from the type of *Lucina*, whilst the hinge is distinguished, as in the case of *L. cælata*, by a conspicuous bifid tooth. There are several other species referred to *Lucina* in this monograph with a similar characteristic dentition.

Species 39. (Mus. Cuming.)

LUCINA SPINIFERA. *Luc. testâ longitudinaliter ovatâ, subcompressâ, umbones versus subtrigonâ, concentricè creberrimè laminato-striatâ, striis ad latera elevatioribus, per marginem posticum spinoso-squamatis, areâ ligamenti lanceolato-planatâ, umbonibus compressis, lunulâ oblongo-ovatâ, peculiariter excavatâ; sordidè albâ, ferrugineo tinctâ.*

THE SPINY LUCINA. Shell longitudinally ovate, rather compressed, inclined to triangular towards the umbones, concentrically very closely laminately striated, striæ more raised at the sides, spinous-squamate along the posterior margins, area of the ligament lanceolately flattened, umbones compressed, lunule oblong-ovate, peculiarly excavated; dull white, rust-stained.

Venus spinifera, Montagu, Test. Brit. p. 577, pl. 17. f. 1.

Myrtea spinifera, Turton.

Lucina spinifera, Hanley.

Lucina Hiattelloides, Philippi.

Hab. Mediterranean and Southern shores of Britain. Ireland. North Scotland. Norway.

The nearest representative of *L. spinifera* in tropical

LUCINA.—PLATE VII.

seas, so far as the external character of the shell is concerned, occurs in certain species of *Artemis*, which have the same flattened ligament-area, and posterior lateral scales more typically developed. There is, however, no indication of the internal lanceolate triangular sinus of *Artemis* in the shell under consideration.

Species 40.. (Mus. Cuming.)

LUCINA FUNICULATA. *Luc. testā oblongo-quadratā, tenuiculā, posticē angulatō-excavatā, anticē excavatā, lunulā*

cordatā minutā profundā impressā, concentricis line tenuibus funiculatā; sordidē albā.

THE CORDED LUCINA. Shell oblong-quadrate, rather thin, posteriorly angularly excavated, anteriorly slightly excavated and impressed with a small deep cordate lunule, concentrically corded with fine ridges: dull white.

Hab. Bay of Honduras; Dyson.

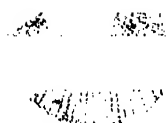
Belonging to the same type as *L. Jamaicensis* of the neighbouring sea.



41.



43.



46.



47.



48.



49.

LUCINA.

PLATE VIII.

Species 41. (Mus. Cuming.)

LUCINA LEUCOMA. *Luc. testâ orbiculari, planiconvexâ, anticè superficialiter excavatâ, lunulâ oblongâ, parvâ, subprofundâ, concentricè lineis incrementi rudè notatâ; opaco-albâ, quasi erosâ.*

THE BLEACHED LUCINA. Shell orbicular, flatly convex, superficially excavated on the anterior side, with the lunule oblong, small, and rather deep, concentrically rudely marked with lines of growth; opaque white, as if eroded.

TURTON, Conch. Dythra Brit. p. 113. pl. 7, f. 8.

Tellina lactea, Pulteney.

Lucina lactea, Lamarck.

Lucina Amphidesmoides, Deshayes.

Amphidesma Lucinalis, Lamarck.

Loripes lactea, Fleming.

Hab. Mediterranean and the British Islands (from shallow water to a depth of eighty fathoms); Forbes and Hanley.

The deep internal position of the ligament of this well-known species, induced Lamarck to place it in the genus *Amphidesma*.

Species 42. (Mus. Cuming.)

LUCINA OBLIQUA. *Luc. testâ suborbiculari, anticè obliquè inclinatâ, solidiusculâ, striâ concentricis et radiantibus undique creberrimè decussatâ, cardine dentibus duabus parvis centralibus et duabus brevibus erectis subdistantibus lateralibus in utraq; valvâ; albidâ.*

THE OBLIQUE LUCINA. Shell nearly orbicular, anteriorly obliquely inclined, rather solid, very closely decussated throughout with radiating and concentric striae, hinge with two small central teeth and two rather distant short erect lateral teeth in each valve; whitish.

Hab. Chusan; H. Benson.

The decussated sculpture of this obliquely inclined species is very close and obtuse; and the hinge is characterized in each valve by two widely separated erect lateral teeth.

Species 43. (Mus. Cuming.)

LUCINA JANEIRENSIS. *Luc. testâ subquadrato-orbiculari, gibbosâ, tumidâ, concentricè rudè striatâ; albidâ.*

THE JANEIRO LUCINA. Shell somewhat squarely orbicular, gibbous, swollen, concentrically rudely striated; whitish.

Hab. Rio Janeiro.

A gibbous shell of very simple character, without any lunule.

Species 44. (Mus. Cuming.)

LUCINA OCHRACEA. *Luc. testâ orbiculari, convexâ, sub-Pectiniformi, ad latera superficialiter excavatâ, radiatim creberrimè tenuiliratâ, liris ad latera distantioribus, concentricè subtilissimè laminatâ; opaco-luteâ.*

THE YELLOW LUCINA. Shell orbicular, convex, somewhat Pecten-shaped, superficially excavated at the sides, radiately very closely finely ridged, ridges more distant at the sides, concentrically very finely laminated; opaque yellow.

Hab. — ?

This species is stained within and without with a peculiar opaque yellow, which has the appearance of having been applied artificially, but that I have seen other specimens, besides the one figured, similarly coloured.

Species 45. (Mus. Cuming.)

LUCINA SCABRA. *Luc. testâ orbiculari, convexâ, sub-Pectiniformi, ad latera subexcavatâ, radiatim tenuiliratâ, liris alternatim majoribus, undique imbricatissimo squamatis, lunulâ elongato-cordatâ, subprofundè impressâ; semipellucido-albâ.*

THE ROUGH LUCINA. Shell orbicular, convex, somewhat Pecten-shaped, slightly excavated at the sides, radiately finely ridged, ridges alternately larger, imbricately squamate throughout, lunule elongately cordate, rather deeply impressed; semitransparent white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 227.

Hab. Bay of Mexico.

The radiating, ridges of this species are characterized throughout with scales, after the manner of *Lima squamosa*, and differ from those of the following in having no concentric sculpture.

Species 46. (Mus. Cuming.)

LUCINA MURICATA. *Luc. testâ orbiculari, convexâ, sub-Pectiniformi, ad latera subexcavatâ, liris radiantibus et concentricis undique creberrimè cancellatis, liris ad latera distantioribus et muricatis; albidâ, interdum ferrugineo pallidè tinotâ.*

THE PRICKLY LUCINA. Shell orbicular, convex, somewhat Pecten-shaped, slightly excavated at the sides, very closely cancellated throughout with radiating and concentric ridges, which are more distant from each other at the sides, and prickly; white, sometimes faintly tinged with rust.

Tellina muricata, Chemnitz, Conch. Cab. vol. xi. pl. 199. f. 1945, G.

Hab. Tumbes, Peru (in soft mud at a depth of eleven fathoms); Cuming.

Distinguished from the preceding by its concentric sculpture, and prickly, rather than scaly, ridges.

Species 47. (Mus. Cuming.)

LUCINA DIVARICATA. *Luc. testâ orbiculari, subglobosâ, lævigatâ, bifariam sulcato-striatâ, striis ante medium regulariter divaricatâ, marginibus incrementi denticulatis, præcipuè ad latus posticum; pellucido-albâ.*

THE DIVARICATE LUCINA. Shell orbicular, somewhat globose, smooth, groove-striated in two ways, striae regularly divaricate from before the middle, edges of growth denticulated, especially on the posterior side; transparent white.

Tellina divaricata, Linnaeus, Syst. Nat. 12th edit. p. 1120.

Lucina divaricata, Lamarck.

Tellina dentata, Wood.

Hab. West Indies. Cape York, North Australia; Jukes.

Mainly distinguished from the allied species which follow, by the denticulated borders, which have formed at

intervals the margin of the shell, and which are most prominent on the posterior side.

Species 48. (Mus. Cuming.)

LUCINA ORNATA. *Luc. testâ suborbiculari, gibbosâ, antice subobliquè inclinatâ, bifariam sulcato-striatâ, striis ante medium regulariter divaricatis, marginibus incrementi subobtusè denticulatis, præcipuè ad latus posticum; semipellucido-albâ.*

THE ORNAMENTED LUCINA. Shell nearly orbicular, gibbous, rather obliquely inclined on the anterior side, groove-striated in two ways, striae regularly divaricate from before the middle, margins of growth rather obtusely denticulated, especially on the posterior side; semitransparent white.

Hab. — ?

The detail of sculpture is the same in this species as in the preceding, except that the margins of growth are less conspicuously denticulated; the shell differs, however, materially in form, being inclined obliquely on the anterior side, whilst it is uniformly of smaller size.

Species 49. (Mus. Cuming.)

LUCINA EBURNEA. *Luc. testâ orbiculari, globoso-convexâ, solidiusculâ, bifariam sulcato-striatâ, striis ante medium regulariter divaricatis; pellucido-albâ.*

THE IVORY LUCINA. Shell orbicular, globosely convex, rather solid, groove-striated in two ways, striae regularly divaricate before the middle; transparent white.

Hab. St. Elena, West Columbia and Panama (in sandy mud at a depth of eleven fathoms); Cuming.

More globose in form than the two preceding species, with the divaricating grooves rather more distant from each other, more circularly disposed at the sides, and not denticulated at the margin.



53.



54.



55.



56.

LUCINA

PLATE IX.

Species 14. (Mus. Cuning.)

LUCINA NOVO-ZELANDICA. *Luc. testâ subglobosâ, inæquilatâ, posticè tumidâ, concentricè rudè irregulariter striatâ, lunulâ nullâ, cardine dentibus centralibus duobus in utrâque valvâ, quarum unâ erectâ, bifidâ; albidâ, epidermide fuscâ indutâ.*

THE NEW ZEALAND LUCINA. Shell somewhat globose, inequilateral, swollen posteriorly, concentrically rudely irregularly striated, no lunule, hinge with two central teeth in each valve, one of which is erect and bifid; whitish, covered with a light brown epidermis.

Hab. New Zealand.

The hinge of this species is distinguished by a central bifid tooth, characteristic of the genus *Diplodonta*.

Species 25. (Mus. Cuning.)

LUCINA CORNEA. *Luc. testâ Cardiformi, paululum altiore quam longâ, depressiusculâ, lunulâ nullâ, concentricè impresso-striatâ, cardine dentibus centralibus duobus in utrâque valvâ, quarum unâ bifidâ; albidâ, epidermide cornâ pallidè olivaceâ nitente indutâ.*

THE HORNY LUCINA. Shell Cardium-shaped, a little higher than long, rather depressed, no lunule, concentrically impressly striated, hinge with two central teeth in each valve, one of which is bifid; whitish, covered with a light olive shining horny epidermis.

Hab. Gulf of Nicoya (in coarse sand at a depth of from ten to thirteen fathoms); Cuning.

The first of a small group included in this plate, all having a bifid tooth nearly similar to that of *Diplodonta*, but more especially characterized by the presence of a shining horny epidermis.

Species 50. (Mus. Cuning.)

LUCINA NITENS. *Luc. testâ depressâ-orbiculari, sub-Cardiformi, posticè subobliquè inclinatâ, concentricè impresso-striatâ, lunulâ nullâ, cardine dentibus centralibus duobus in utrâque valvâ, quarum unâ bifidâ; albidâ, epidermide cornâ olivaceâ nitente indutâ.*

THE SHINING LUCINA. Shell depressly orbicular, somewhat Cardium-shaped, posteriorly rather obliquely inclined, concentrically impressly striated, no lunule,

hinge with two central teeth in each valve, one of which is bifid; whitish, covered with a shining horny epidermis.

Hab. Isle of Muerte, Bay of Guayaquil (in sandy mud at a depth of about eleven fathoms); Cuning.

Distinguished from the preceding by a more depressly orbicular form, which, though slight, appears to be characteristic.

Species 51. (Mus. Metcalfe.)

LUCINA ADANSONI. *Luc. testâ depressâ-orbiculari, subæquilatâ, concentricè tenuistriatâ, lunulâ nullâ, cardine dentibus centralibus duobus in utrâque valvâ, quarum unâ bifidâ; albidâ, epidermide tenui cornâ nitente, pallidè olivaceâ, plerumque medio ferrugineo tinctâ, indutâ.*

ADANSON'S LUCINA. Shell depressly orbicular, nearly equilateral, concentrically finely striated, no lunule, hinge with two teeth in each valve, one of which is bifid; whitish, covered with a thin shining horny epidermis of a pale olive-colour, mostly rust-stained about the middle.

Le Falan, Adanson.

Hab. Senegal.

Covered with the same shining horny epidermis which characterizes the two preceding species from Central America.

Species 52. (Mus. Hanley.)

LUCINA SARRII. *Luc. testâ subquadrato-orbiculari, inæquilatâ, tenuissimâ, inflatâ, posticè sulcatâ, concentricè subtilissimè rudè striatâ, areâ ligamenti oblongo-ovali, subexcavatâ, lunulâ oblongo-ovali, leviter excavatâ, cardine edentulâ; albâ.*

SARRI'S LUCINA. Shell somewhat squarely orbicular, very thin, inflated, grooved on the posterior side, concentrically very finely rudely striated, area of the ligament oblong-oval, a little excavated, lunule oblong-oval, slightly excavated, hinge toothless; white.

Arinus Sarrii, Loeven, Ind. Moll. Scandinav.

Hab. Sweden.

A very thin inflated toothless shell, differing from the tumid edentulate *Lucine* of Pl. V. by the characteristic oval excavated lunule and ligamentary area.

Species 53. (Mus. Hanley.)

LUCINA GLOBULARIS. *Luc. testâ subglobosâ, tenui, inflatâ; præcipuè circa umbones, lævigatâ, aut concentricè irregulariter tenuistriatâ, lunulâ nullâ, cardine dentibus duobus centralibus in utraq[ue] valve; albidâ.*

THE GLOBULAR LUCINA. Shell subglobose, thin, inflated, especially around the umbones, smooth or concentrically irregularly finely striated, no lunule, hinge with two central teeth in each valve; whitish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 231.

Hab. New Zealand.

This shell in Mr. Hanley's cabinet is referred to the above-named Lamarckian species, on the authority of a continental collector from whom it was received.

Species 54. (Mus. Cuming.)

LUCINA GIBBA. *Luc. testâ globosâ, valdè gibbosâ, Isocardiaformi, bifuriam latè sulcatis, liris corrugato-nudatis, ante medium divaricatis, interstitiis concentricè subtilissimè striatis, lunulâ parvâ, rotundato-cordatâ; albâ.*

THE GIBBOUS LUCINA. Shell globose, very gibbous, Isocardia-shaped, broadly grooved in two directions, ridges corrugately waved, divaricate before the middle, interstices concentrically very finely striated, lunule small, rotundately cordate; white.

GRAY, Annals of Philosophy, 1825, p. 136.

Tellina divaricata pars, Chemnitz, Conch. Cab. vol. vi. pl. 13. f. 130.

Tellina sphaeroides, Conrad.

Hab. ———?

This fine species may be readily distinguished by its very gibbous Isocardia-like form, and broad corrugate grooving.

Species 55. (Mus. Cuming.)

LUCINA SERICATA. *Luc. testâ subquadrato-orbiculari, posticè obliquè inclinatâ, tenui, depressâ, concentricè impresso-striatâ, lunulâ nullâ; semipellucido-albâ, epidermide corneâ pallidè olivaceâ nitente indutâ.*

THE SILK-CLAD LUCINA. Shell somewhat squarely orbicular, inclined obliquely on the posterior side, thin, depressed, concentrically impressly striated, no lunule; semitransparent white, covered with a shining pale olive horny epidermis.

Hab. ———?

This and the following species are of the same character as the second and third of this plate, differing, however, essentially in form.

Species 56. (Mus. Cuming.)

LUCINA TELLINOIDES. *Luc. testâ depresso-orbiculari, posticè subobliquè inclinatâ, concentricè subirregulariter et tenuissimè impresso-striatâ, lunulâ nullâ; semipellucido-albâ, epidermide corneâ flavicante nitente indutâ.*

THE TELLINA-LIKE LUCINA. Shell depressly orbicular, rather obliquely inclined on the posterior side, concentrically rather irregularly and very finely impressly striated, no lunule; semitransparent white, covered with a shining yellowish-horny epidermis.

Hab. Isle of Muerte, Bay of Guayaquil (in sandy mud at a depth of about eleven fathoms); Cuming.

This and the allied species represented in this plate, should, doubtless, be arranged under a separate genus allied to *Diplodonta*.

Species 57. (Mus. Cuming.)

LUCINA FRIABILIS. *Luc. testâ orbiculari, subæquilatâ, tenui, tumidâ, concentricè subirregulariter et tenuissimè striatâ, lunulâ nullâ; rosaceo-albâ, epidermide tenui corneâ nitente indutâ.*

THE FRIABLE LUCINA. Shell orbicular, nearly equilateral, thin, swollen, concentrically rather irregularly and very finely striated, no lunule; pinkish-white, covered with a thin shining horny epidermis.

Hab. ———?

Belonging to the same type as the preceding species, from which it differs specifically in being of a more rounded swollen form and of larger size.



35



36. b.



39



39. b.



60. a.



60. b.

LUCINA.

PLATE X.

Species 35. (Mus. Cuming.)

LUCINA BULLULA. *Luc. testā globoso-ovalā, tenui, inflatā, lateribus subulatā, concentricè subtilissimè striatā, lunulā viz nullā, cardine edentulo; incarnato-albā.*

THE LITTLE BUBBLE LUCINA. Shell globosely ovate, thin, inflated, slightly winged at the sides, concentrically very finely striated, scarcely any lunule, hinge toothless; flesh-tinged white.

Hab. — ?

A very slight species partaking of the form and general character of *Cyrenoides*.

Species 37. (Mus. Cuming.)

LUCINA ANTILLARUM. *Luc. testā subcordato-ovalā, crassiusculā, radiatim subobsoletè liratā, liris planis, subdistantibus, striis elevatis concentricis concinnè clathratā, lunulā parvā, cordatā; albidā, luteo tinctā.*

THE WEST INDIA LUCINA. Shell somewhat cordately ovate, rather thick, radiately rather obsoletely ridged, ridges flattened, rather distant, neatly latticed with concentric raised striae, lunule small, cordate; whitish, tinged with yellow.

Hab. Island of St. John's, West Indies; Hartvig.

Of an unusually gibbous cordate form, very neatly latticed throughout.

Species 38. (Mus. Cuming.)

LUCINA PECTEN. *Luc. testā suborbiculari, obliquè productā, valde inæquilatērā, compressā, liris subtilibus radiantibus et concentricis densiclatratā, lunulā lanceolato-oblongā; lutescente-albā.*

THE COMB LUCINA. Shell nearly orbicular, produced obliquely, very inequilateral, compressed, closely latticed with fine radiating and concentric ridges, lunule lanceolately oblong; yellowish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 230.

Hab. Mediterranean.

This, and not the shell described and figured at Sp. 34, appears to be the true *L. pecten* inhabiting the Mediterranean and coast of Senegal. For the former species from

the West Indies and the Pacific, I propose to substitute the name *L. occidentalis*.

Fig. 41 b. (Mus. Cuming.)

The shell here figured represents a larger and finer state than that given at Pl. VIII. of *L. leucoma*, Sp. 41.

Species 58. (Mus. Cuming.)

LUCINA OVULUM. *Luc. testā globosā, inflatā, lavigatā, aut, sub lente, radiatim tenuissimè striatā, lunulā oblongo-cordatā, superficialiā, cardine edentulo; albidā, intus hic illic pallidè croceā.*

THE LITTLE EGG LUCINA. Shell globose, inflated, smooth, or, beneath the lens, radiately very finely striated, lunule oblong-cordate, superficial, hinge toothless; whitish, tinged here and there with light saffron-colour.

Hab. Mauritius.

A light toothless shell similar to *L. bullula*, but more gibbous and truly globose.

Fig. 36 b. (Mus. Cuming.)

A small variety of the British *L. rotundata*.

Species 59. (Mus. Cuming.)

LUCINA LEUCOPHOTA. *Luc. testā suborbiculari, crassiusculā, concentricè rugoso-striatā, lunulā planatā, viz nullā, cardine dentibus duobus divaricatis, quorum uno duplicato, in utrāque valvā; sordidè albā, quasi erosā, epidermide olivaceā partim indutā.*

THE RUSSET-CLAD LUCINA. Shell nearly orbicular, rather thick, concentrically roughly striated, lunule flattened, scarcely any, hinge composed of two divaricate teeth in each valve, one of which is duplicate; dead white, as if eroded, partially covered with an olive epidermis.

Hab. — ?

This is rather a doubtful *Lucina*, of stout growth, and covered with an epidermis, which is not usual in the genus.

Fig. 39 b. (Mus. Cuming.)

An authentic specimen of Philippi's *Lucina Hiatelloides*, which proves to be identical with *L. spinifera*.

Species 60. (Fig. a, b, Mus. Cuming.)

LUCINA ICTERICA. *Luc. testā subtrigono-orbiculari, solidā, subcompressā, concentricè laminato-striatā, striis umbones versus plus minus abrasis, sub lente minutissimè radiatim striatā; lutescente-albā.*

THE JAUNDICED LUCINA. Shell somewhat triangularly orbicular, solid, rather compressed, concentrically laminately striated, the striae being more or less abraded towards the umboes; beneath the lens very minutely radiately striated; yellowish-white.

Hab. — ?

In this species the ligament is situated in an oblique internal pit, as in the British *J. leucoma*, partaking in that respect of the character of *Amphidesma*.

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63.



66. a



67



66. b.



68.



69.

LUCINA.

PLATE XI.

Species 61. (Mus. Cuming.)

LUCINA ARCUATA. *Luc. testâ obliquè orbiculari, subcompressâ, lævigatâ, striis undulatis transversè excusptâ, lunulâ oblongo-cordatâ; semipellucido-albâ.*

THE RIPPLED LUCINA. Shell obliquely orbicular, rather compressed, smooth, transversely engraved with waving striae, lunule oblong-cordate; semitransparent white.

Cardina arcuatum, Montagu, Test. Brit. p. 85. pl. 3. f. 2.

Lucina arcuata, Fleming.

Tellina dicaricata pars, Linnæus.

Lucina dicaricata, Forbes and Hanley.

Lucina commutata, Philippi.

Hab. Mediterranean.

This is one, among many instances, in which two or three species were confounded by Linnæus under one head. Irrespective of its small size, it differs from the true *L. dicaricata* of the West Indies in not being denticulated on the posterior side, and in the waved transverse striae being less sharply divaricate.

Species 62. (Mus. Cuming.)

LUCINA FLEXUOSA. *Luc. testâ subtrigono-orbiculari, lævigatâ, posticè sulcatâ, sulco latiusculo subprofundo ab umbone in utrâque valvâ radiante, cardine dente unico subobscurò; albidâ.*

THE FLEXUOUS LUCINA. Shell somewhat triangularly orbicular, smooth, grooved posteriorly, the groove being rather broad and deep, radiating in each valve from the umbo, hinge with a single obscure tooth; whitish.

Venus sinuosa, Donovan, British Shells, vol. ii. pl. 42. f. 2.

Tellina flexuosa, Montagu.

Amphidesma flexuosa, Lamarck.

Lucina sinuata, Lamarck.

Cryptodon flexuosum, Turton.

Axius flexuosus, Loeven.

Hab. Britain; Sweden; Massachusetts, U. S.

The accompanying figure of this species is taken from an American specimen, supplied by Dr. Gould. Upon our own shores it is of a more irregular and flexuosa growth.

Species 63. (Mus. Cuming.)

LUCINA FERRUGINOSA. *Luc. testâ orbiculari, subobliquâ, posticè obsolete sulcatâ, concentricè obscurè costellatâ, umbonibus subprominentibus; sordidè ferrugineo-fuscâ.*

THE RUSTY LUCINA. Shell orbicular, somewhat oblique, posteriorly obsolete grooved, concentrically obscurely ribbed, umbones rather prominent; dirty rust-brown.

FORBES and HANLEY, Brit. Moll. vol. ii. p. 60. pl. 34. f. 1.

Kellia ferruginosa, Forbes.

Clavina ferruginosa, *abyssicola*, and *Crotilineasis*, Jeffreys.

Hab. Crete and the Morea; Captains Graves and Spratt.

Loch Fyne and Skye, North Britain (in mud at the depth of 120 fathoms); M'Andrew.

This little species may be easily recognized by its thick ferruginous coating.

Species 64. (Mus. Cuming.)

LUCINA GEMMA. *Luc. testâ quadrato-oblongâ, planâ, tenuissimâ, utrinque sulcatâ et alatâ, concentricè eleganter laminatâ, laminis subtilissimè serratis, ad latera squamato-productis; pellucido-albâ.*

THE GEM LUCINA. Shell squarely oblong, flattened, very thin, grooved and winged on each side, concentrically elegantly laminated, laminae very finely serrated, squamately produced at the sides; transparent white.

Hab. Loay, Island of Bohol, Philippines.

An exquisitely sculptured species, allied to *L. dentifera*.

Species 65. (Mus. Cuming.)

LUCINA DIGITALIS. *Luc. testâ subtrigono-orbiculari, convexâ, undique obliquè circulariter striato-sulcatâ; albidâ, rufo radiatâ, epidermide lætescente indatâ.*

THE DIGITAL LUCINA. Shell somewhat triangularly orbicular, convex, obliquely circularly striately grooved throughout; whitish, rayed with red, covered with a yellowish epidermis.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 231.

Hab. Gibraltar; M'Andrew.

Very characteristically engraved with fine grooves, ranging obliquely across the shell in a circular manner.

Species 66. (Fig. a, b, Mus. Cuming.)

LUCINA PISUM. *Luc. testā globoso-cordatā, solidā, costis concentricis et radiatis densicathratā, interstitiis foveolatis, latere postico sulcato, antico brevi, lunulā parvā, profundē excavatā; albidā.*

THE PEA LUCINA. Shell globosely cordate, solid, thickly latticed with concentric and radiating ribs, of which the interstices are pitted, posterior side grooved, anterior short, lunule small, deeply excavated; whitish.

Hab. Port Essington; Jukes. Singapore (in sandy mud at the depth of seven fathoms); Cuming.

A small solid Isocardia-like species about the size and form of a pea, engraved with strong blunt latticed sculpture.

Species 67. (Mus. Cuming.)

LUCINA LENTICULA. *Luc. testā orbiculari, depressiusculā, concentricè creberrimè laminato-striatā, lunulā oblongo-cordatā; albā.*

THE LITTLE LENS LUCINA. Shell orbicular, rather depressed, concentrically very closely laminately striated, lunule oblong-cordate; white.

Hab. —?

Partaking very much of the form of *Artemis*, but wanting the lanceolate pallial sinus which is characteristic of that genus.

Species 68. (Mus. Cuming.)

LUCINA CALCULUS. *Luc. testā cordato-ovatā, altiore quam longā, crassiusculā, levigatā, politā; nitidè albā.*

THE PEBBLE LUCINA. Shell cordately ovate, higher than long, rather thick, smooth, polished; shining white.

Hab. Gulf of Nicoya (dredged from among coarse sand at a depth of from ten to thirteen fathoms); Cuming.

A small smooth shining white shell of rather solid growth.

Species 69. (Mus. Cuming.)

LUCINA FABULA. *Luc. testā oblongā, planiusculā, utriusque subulatā, concentricè eleganter laminato-striatā, areā ligamenti lanceolato-planā, lunulā lanceolatā, convexā; pellucido-albā.*

THE LITTLE BEAN LUCINA. Shell oblong, rather flattened, slightly winged on each side, concentrically elegantly laminately striated, area of the ligament lanceolately flattened, lunule lanceolate, convex; transparent white.

Hab. Batangas, Island of Luzon, Philippines (in coarse sand at a depth of nine or ten fathoms); Cuming.

Slightly produced on each side, and sculptured throughout with delicate concentric laminae.

LUCINA.

	Plate.	Species.		Plate.	Species.
<i>Adansonii</i> , D'Orbigny	VI.	30	<i>Janeirensis</i> , Reeve	VIII.	43
<i>alba</i> , Turton	III.	13	<i>lactea</i> , Lamarck	VIII.	41
<i>Amphidesmoides</i> , Desh.	VIII.	41	<i>lenticula</i> , Reeve	XI.	67
<i>Anatellinoides</i> , Reeve	IV.	19	<i>leucoma</i> , Turton	VIII.	41
<i>annulata</i> , Reeve	IV.	17	<i>leucophæota</i> , Reeve	X.	59
<i>Antillarum</i> , Reeve	X.	37	<i>malum</i> , Reeve	V.	26
<i>arcuata</i> (<i>Cardium</i>), Montagu . .	XI.	61	<i>muricata</i> (<i>Tellina</i>), Chemn. . .	VIII.	46
<i>argentea</i> , Reeve	II.	6	<i>nitens</i> , Reeve	IX.	50
<i>aurantia</i> , Deshayes	VI.	31	<i>Novo-Zelandica</i> , Reeve	IX.	14
<i>barbata</i> , Reeve	IV.	16	<i>obliqua</i> , Reeve	VIII.	42
<i>bicornis</i> , Reeve	II.	8	<i>occidentalis</i> , Reeve	VII.	34
<i>borealis</i> (<i>Venus</i>), Linn.	III.	13	<i>ochracea</i> , Reeve	VIII.	44
<i>bullula</i> , Reeve	X.	35	<i>ornata</i> , Reeve	VIII.	18
<i>caulata</i> , Reeve	VI.	27	<i>ovulum</i> , Reeve	X.	58
<i>calculus</i> , Reeve	XI.	68	<i>ovum</i> , Reeve	V.	21
<i>Childreni</i> , Gray	III.	12	<i>pecten</i> , Lamarck	X.	38
<i>columbella</i> , Lamarck	VI.	30	<i>Pennsylvanica</i> (<i>Venus</i>), Linn. .	VI.	29
<i>commutata</i> , Philippi	XI.	61	<i>Philippiana</i> , Reeve	V.	23
<i>cornu</i> , Reeve	IX.	25	<i>Philippinarum</i> , Hanley	IV.	18
<i>dentifera</i> , Jonas	III.	10	<i>pila</i> , Reeve	V.	24
<i>digitalis</i> , Lamarck	XI.	65	<i>pisum</i> , Reeve	XI.	66
<i>divaricata</i> (<i>Tellina</i>), Linn. . . .	VIII.	47	<i>punctata</i> (<i>Venus</i>), Linn.	I.	2
<i>divaricata</i> , Forbes & Hanley . .	XI.	61	<i>radula</i> , Lamarck	III.	13
<i>eburnea</i> , Reeve	VIII.	49	<i>rotundata</i> , Turton	VII.	36
<i>edentula</i> (<i>Venus</i>), Chemn. . . .	II.	9	<i>rugifera</i> , Reeve	I.	1
<i>edentula</i> , Philippi	V.	23	<i>Sarsii</i> (<i>Axinus</i>), Loeven	IX.	52
<i>exasperata</i> , Reeve	I.	4	<i>scabra</i> , Lamarck	VIII.	45
<i>fabula</i> , Reeve	XI.	69	<i>Senegalensis</i> , Reeve	IX.	51
<i>ferruginosa</i> , Forbes & Hanley . .	XI.	63	<i>sericata</i> , Reeve	IX.	55
<i>fibula</i> , Reeve	VII.	33	<i>simplex</i> , Reeve	III.	11
<i>flexuosa</i> (<i>Venus</i>), Donovan . . .	XI.	62	<i>sinuata</i> , Lamarck	XI.	62
<i>friabilis</i> , Reeve	IX.	57	<i>speciosa</i> , Reeve	VI.	32
<i>funiculata</i> , Reeve	VII.	40	<i>spinifera</i> (<i>Venus</i>), Montagu . .	VII.	39
<i>gemma</i> , Reeve	XI.	64	<i>sulcata</i> , Reeve	IV.	20
<i>gibba</i> , Gray	IX.	54	<i>Tellinoides</i> , Reeve	IX.	56
<i>globularis</i> , Lamarck	IX.	53	<i>tigerina</i> (<i>Venus</i>), Linn.	I.	3
<i>Hiatelloides</i> , Philippi	VII. and X.	39	<i>tumida</i> , Reeve	V.	22
<i>icterica</i> , Reeve	X.	60	<i>venusta</i> , Philippi	III.	15
<i>interrupta</i> (<i>Cyth.</i>), Lamarck . .	II.	5	<i>virgo</i> , Reeve	VI.	28
<i>Jamaicensis</i> (<i>Venus</i>), Chemn. .	II.	7			



ERRATA.

Sp. 34. For *L. pecten*, Lamarck, read *L. occidentalis*, Reeve.

Sp. 51. For *L. Adansonii*, read *L. Senegalensis*, Reeve.

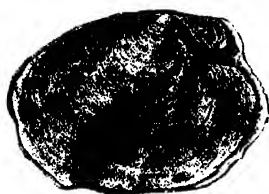
MONOGRAPH
OF THE GENUS
HEMIPECTEN.

Much more eath to tell the stars ou hy, ^
Albe they endless seeme in estimation,
Than to recount the sea's posterity :
So fertile be the floods in generation.—*Spenser.*

Hemipecten



1.0.



" h



2. d.

HEMIPecten.

PLATE I.

Genus **HEMIPecten**, *Adams and Reeve*.

Testa adherens, inequivalvis, irregularis, hyalina, valvâ superiori anticè simplici, posticè vix auriculatâ, valvâ inferiori anticè simplici, posticè conspicuè auriculatâ, infra auriculam profunde sinuatâ et denticulatâ; cardine edentulo, ligamento leviter marginati, cartilagineo parvo in cavitate centrale.

Shell attached, inequivalve, irregular, hyaline, upper valve simple anteriorly, very slightly auriculated posteriorly, lower valve simple anteriorly, conspicuously auriculated posteriorly, deeply sinuated and denticulated beneath the auricle; hinge edentulate, ligament slightly marginal, with a small cartilage in a central cavity.

The subject of the present new genus, proposed by Mr. Arthur Adams and myself in the 'Mollusca of the Voyage of the Samarang,' is an inequivalve shell of the lamellibranchiate family *Pectinacea*, intermediate in its characters between *Pecten* and *Anomia*. Like *Anomia* it is a thin hyaline substance, adhering to some foreign body, and of an irregular growth, according to the inequalities of its place of attachment. Like *Pecten* the hinge consists of a slight marginal ligament, intersected in the middle by a small triangular cartilage, situated in the hollow of a superficial cavity in each valve. The under valve is distinguished by a conspicuous auricle on the posterior side, and beneath this is a sinus so deeply cut in the direction of the hinge-margin as to remind one of *Pedum*, especially when presented with the under valve closed upon the hollow of the upper one, as in Fig. 1 *b*, 2 *b*; and the margin of this sinus, as indicated in some of the *Pectens*, is furnished with a row of sharp erect denticles. The shell bears some resemblance to *Pedum*, from the circumstance of there being no corresponding sinus in the upper valve; but it is apparently only a character of resemblance, not one of affinity. The shell has no umbonal area; nor are the sides of either valve reflected.

The observations to be derived from the microscopic structure of *Hemipecten* which has been kindly exhibited to me by Dr. Carpenter, are, however, singularly contradictory to the views presented by its external characters. Of the two specimens collected, the texture and composition of both valves consist of a hyaline semiparlaceous lamina, presenting a series of closely-packed concentric lines, the interstices of which are minutely rayed with much finer lines. Submitted to the microscope, the

flat valve in both specimens (Fig. 1 *a*, 2 *d*.) is permeated by copious tubuli, a character in which the genus agrees with *Pedum* and with some species of *Lima*, and differs from *Pecten*. This tubularity Dr. Carpenter observed to exist also in the upper valve of the colourless specimen (Fig. 1 *c*), but not in the other (Fig. 2 *c*), so far as the Bryozoon upon its surface allows of an examination.

The upper valve of the coloured specimen Fig. 2 *c*. possesses a rudimental sculpturing over its entire surface; but as it may have received this from the parasite, and exhibits no other appreciable point of difference, we have not ventured to distinguish it specifically from the white specimen.

Species 1. (Fig. 1 and 2, Mus. Belcher.)

HEMIPecten FORBESIANUS. *Hemip. testâ orbiculari, Anomiaformi, tenuissimâ, hyalinâ, concentricè lineatâ, linearum interstitiis eximie reticulatis; valvâ inferiori planulatâ, auriculâ longitudinaliter radiatâ, sinu profundo, valvâ superiori convexâ, vix auriculatâ; pelucido-albâ, valvâ superiori interdum rufo-aurantio radiatâ.*

FORBES' HEMIPecten. Shell orbicular, *Anomia*-shaped, very thin, hyaline, concentrically lineated, interstices between the lines delicately reticulated; lower valve flattened, auricle longitudinally rayed, sinus deep, upper valve convex, scarcely auriculated; transparent white, upper valve sometimes rayed with orange-red.

ADAMS and REEVE, *Proc. Zool. Soc.* 1849, p. 133, *Mollusca*, pl. 1. f. 2. and *Moll. Voy. Samarang*.

Hab. Sooloo Archipelago, Eastern Seas (dredged from a coral and stony bottom at a depth of about fourteen fathoms); Belcher.

Two specimens of this interesting new form were collected during the voyage of H.M.S. *Samarang*, one smooth and white, the other slightly sculptured in a decussately corrugated style, probably from the effect of the Bryozoon which covers it, and rayed with orange-red. The under valve is smooth in both specimens, showing it to have been attached; the upper valve is more or less covered in both with various parasitic objects.

We have the pleasure to name the species in honour of Professor Edward Forbes, who notices the genus, in his valuable work on the British Mollusca, as affording a curious intermediate link between *Pecten* and *Anomia*.





1. a.



2. a.



2. b.



1. b.

OLIVA.

PLATE I.

Genus OLIVA, Bruguière.

Testa oblonga, lævis, subcylindracea, basi emarginata, spirā plerumque breviusculā, suturis peculiariter canaliculatis, columellā plicatā, plicis obscuris, variis, sæpe planulatis et callosis. Apertura elongata, angusta, interdum subpatula.

Shell oblong, smooth, somewhat cylindrical, emarginated at the base, spire generally rather short, with the sutures peculiarly canaliculated, columella plaited, plaits obscure, variable, often flattened and callous. Aperture elongate, narrow, sometimes rather wide.

The Olives are a very distinct group of mollusks, partaking of the characters of *Cypræa* and *Ancillarin*, but more of the latter than of the former genus. The shell, as may be gathered from its enamelled interior, is enveloped by certain parts of the animal, and like that of *Cypræa* is generally composed of two or more layers of different pattern. This variety of colouring is not, however, shown at different stages of the shell's growth as in *Cypræa*: it is only to be discovered by removing the outer coat with acid. Hence it may be inferred that the different coatings are deposited simultaneously during the formation of the shell, whilst the mantle is furled, so to speak, over the edge of the lip, and held in a state of tension by a cord which passes into the narrow sutural channel of the spire. Specimens of *O. gibbosa* and *Brasiliensis* are frequently sold by dealers with the outer coating removed to show the pattern beneath, in order to give them the appearance of other species.

The genus *Oliva* has generally been regarded as one of which the species are extremely difficult to determine. They have not proved so on examination. Species, like *O. reticularis*, for example, which differ very much in form, are distinguished by a marked peculiarity of pattern; and others, like *O. inflata*, which present an almost endless variety of pattern, are characterized by some peculiarity of form. In *O. ispidula*, which varies in an extraordinary degree both in form and pattern, the shell is constantly distinguished by the same particular colour in the interior, and there are several species, like *O. cruenta*, whose varieties are but so many different phases of the same idea of pattern.

The principal localities of this genus are Mauritius and the Philippine Islands in the eastern hemisphere, and Central America in the western. Out of a hundred species

described in the following monograph, the habitats of about seventy are determined.—Mauritius, Ceylon, the Molucca and Philippine Islands yield about twenty-five species, including the large and richly-coloured *O. tremulina*, *erythrostoma*, *Olympiadin*, *nobilis*, *textilina*, &c.; and Central America about thirty species. Fifteen of these are from Panama, Guayaquil, Nicaragua, Mexico, &c., among which are the giant *O. porphyria*, and the beautiful *O. angulata*, *splendidula*, *polypasta*, *testacea*, &c., and fifteen from the West Indies, all of which are small, with the single exception *O. fusiformis*. The most northern range of the genus is at Senegal, West Africa, where, of five species, two belong to distinct types, one, *O. acuminata*, having a representative on the coast of Sumatra in *O. subula*, and the other, *O. hiatalula*, a representative at Real Iclejos, Mexico, in *O. testacea*. At Zanzibar on the opposite shore of Africa is the characteristic *O. inflata*; and two very peculiar species, *O. Indusica* and *Ancillarioides*, are recorded from Kurrachce at the mouth of the Indus. Three species from the coast of Brazil, *O. Brasiliensis*, *patula*, and *aquatilis*, present forms which are quite peculiar to that locality. Only two species, of very different typical character, are recorded from the west coast of South America, one of tolerable size and extremely variable in colouring, *O. Peruviana*, the other of small dimension, *O. columellaris*. Three species are described from the Society and Feejee Islands, and two from Australia.

The following may be noted as peculiar instances of distribution. The only two species at present known from the Red Sea are identical with two inhabiting the West Indies, *O. nutica* and *jaspidea*. *O. reticularis*, inhabiting the Gulf of California, is found in a smaller state in the West Indies. *O. Duclosi* is found at the Philippines in the Eastern Seas, and at the Society Islands in the Pacific. *O. kaleontina* inhabits the Gulf of California, and also one of the Galapagos Islands. Lastly, we have a species, *O. cruenta*, from four different localities singularly remote from each other,—the Philippine Islands, Zanzibar, Australia, and the Society Islands.

Species 1. (Fig. a, b, Mus. Stcerc.)

OLIVA ANGULATA. *Oliv. testā ovalā, ventricosā, crassissimā, ponderosā, supra medium angulato-tumidā, spirā breviusculā, columellā valdē callosā, planiplicatā, plicis ferē obsolete; cinereo-albidā, olivaceo et griseo mar-*

moratâ, strigis transversis nigricante-castaneis, aculé angulatis, hic illic longitudinaliter pictâ, columellâ pallidè carneolâ, roseo tinctâ.

THE ANGLED OLIVE. Shell ovate, ventricose, very thick, ponderous, angularly swollen above the middle, spire rather short, columella very callous, flatly plaited, plaits almost obsolete; ash-white, mottled with olive and grey, longitudinally painted here and there with sharply angled transverse very dark chestnut streaks, columella pale carnation tinged with rose.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 607.

Voluta incrassata, Dillwyn.

Eadem var. *Oliva azemula*, Duclou.

Hab. Gulf of Nicoya, Central America (in sandy mud at the depth of nine fathoms); Cuming.

There is little variation in this fine species, which is distinguished from all others by its very thickened angular growth, and sharply zigzag bold splashes of colouring.

Species 2. (Fig. a, Mus. Cuming; Fig. b, Mus. Steere.)

OLIVA PORPHYRIA. *Oliv. testâ cylindræco-oblongâ, ventricosâ, peramplâ, spirâ brevî, subdepressâ, apice*

elato, columellâ tumidâ, undique dense plicatâ, plicis paululum obscuris; violaceo-carnelâ, lineis reticulato-rufis undique angulato-reticulatâ, maculis grandibus obscurè bifusciatâ, columellâ basi violaceo tinctâ.

THE PORPHYRY OLIVE. Shell cylindrically oblong, ventricose, very large, spire short, rather depressed, apex raised, columella swollen, densely plaited throughout, plaits a little obscure; violet-flesh colour, angularly reticulated throughout with burnt-red lines, and obscurely two-banded with large blotches of the same colour, columella tinged at the base with violet.

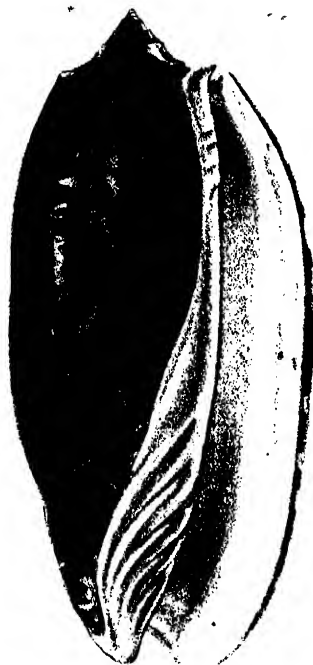
Voluta porphyria, Linnæus, *Syst. Nat.* (12th edit.) p. 1187.

Oliva porphyria, Lamarck.

Cylinder porphyreticus, D'Argenville.

Hab. Panama (in sandy mud at low water); Cuming.

This fine species, the largest of the genus, is remarkably distinct from any other. From the peculiarity of its marking it has been long known as the 'Camp Olive.' Regarding the shell in the position in which it would be if the animal were placed with its head to the left of the observer, the interstitial spaces of the net-work have the appearance of a dense encampment of various-sized tents.



3. b.



3. c.



4. b.

OLIVA

PLATE II.

Species 3. (Fig. 3 *a'* and *3' c*, Mus. Steere;
Fig. 3 *b*, Mus. Cole.)

OLIVA NOBILIS. *Oliv. testâ elongato-cylindraceâ, crassiusculâ, spirâ sæpissimè acuminato-exsertâ, anfractibus propè ad suturas et ante medium subcontractis, plicis columellaribus vix numerosis, anterioribus fortiusculis; pallidè lacteâ, nigricante-fusco reticulatè trifasciatâ et longitudinaliter undato-strigatâ, columellâ et apertura fauce carneolo-lacteis.*

THE NOBLE OLIVE. Shell elongately cylindrical, rather thick, spire most frequently acuminate exserted, whorls somewhat contracted near the sutures and before the middle, columellar plaits not very numerous, the front ones rather strong; pale cream-colour, reticulately three-banded and longitudinally wave-streaked with blackish-brown, columella and interior of the aperture carnelion cream-colour.

Hab. Mauritius.

In a genus of which the species are so nearly related, and the individuals of species so variously painted, opinions must necessarily differ greatly as to the value and limit of specific character. Although it has been my endeavour to restrict the number of species where an observation of many specimens shows them to have been founded upon varieties, I cannot bring my mind to believe that the shell under consideration, which has been referred sometimes to *O. tremulina* and sometimes to *O. erythrostoma*, belongs to either species. Not uncommon in collections, and easy of recognition, it is uniformly of larger and more solid growth than its congeners, and of a pale carnelion cream-colour, richly banded and blotched in network style with dark brown, the brown being blue-clouded as in other species. M. Duclos gives a very characteristic

figure of it under *O. erythrostoma*, at Pl. 31. f. 7, and two rather indifferent figures of it under *O. tremulina*, at Pl. 11. f. 5 and 7, of his monograph.

Species 4. (Fig. *a*, Mus. Cole; Fig. *b*, Mus. Steere.)

OLIVA PONDEROSA. *Oliv. testâ oblongo-cylindraceâ, crassâ, obesâ, spirâ parum exsertâ, anfractu ultimo apicem versus plus minus producto, plicis columellaribus sub-numerosis, partim evanidis; lacteâ, strigis undatis aut reticulatis brevibus interruptis obscurè carnescentibus aut violaceis, hic illic fuscis, sparsim pictâ, columellâ et apertura fauce carneolo-albis, aperturâ interdum carneo-rufescente tinctâ.*

THE PONDEROUS OLIVE. Shell oblong-cylindrical, thick, stout, spire but little exserted, last whorl more or less produced towards the apex, columellar plaits rather numerous, but partially faded; cream-white, sparingly painted with obscure bluish or violet short interrupted streaks, here and there brown and reticulated, columella and interior of the aperture carnelion-white, aperture sometimes tinged with flesh-pink.

DUCLOS, Mon. Oliv. Pl. 15. f. 8 and 9.

Hab. Mauritius.

This fine species is distinguished from the preceding and allied forms, by its solid structure and by the produced growth of the last whorl at its hind extremity, where it rises into a callosity above the suture after the manner of *O. maura*. The painting consists of scattered interrupted brown streaks, reticulated in places, obscured into a bluish violet or milky aspect, by an overcharge of the same colourless enamel as the ground.





S. a.



S. b.



S. c.



S. d.



S. e.

OLIVA

PLATE III.

Species 5. (Fig. *a*, *c*, and *e*, Mus. Cole; Fig. *b*,
Mus. Steere, and Fig. *d*, Mus. Cuming.)

OLIVA OLYMPIADINA. *Oliv. testâ oblongo-cylindræâ, crassâ, infra suturas subcontractâ, spirâ exertâ, anfractu ultimo ad extremitatem posticam aperturæ caluso-producto, plicis columellaribus plus minus evanidis; albâ, purpurascente-fusco subobscurè dilutè reticulatâ, intus fuscè sæpè perampliter maculatâ, columellâ et aperturæ foveæ albâ.*

THE OLYMPIAN OLIVE. Shell oblong-cylindrical, thick, slightly contracted beneath the sutures, spire exerted, last whorl callously produced at the hind extremity of the aperture, columellar plaits more or less faint; white, somewhat obscurely dilutely reticulated with purplish-brown, often very largely blotched with dark brown, columella and interior of the aperture white.

DUCLOS, Mon. Oliv. pl. 12. f. 10 to 12.

Hab. Mauritius.

A magnificent series of about two hundred specimens,

all of this species, collected at the Island of Mauritius by Miss Cole, has enabled me to trace the connection of its varieties with great accuracy. As represented at Fig. 5 *b* and Fig. 5 *e*, the shell is faintly mottled throughout with light milky-purplish net-work, interrupted with two broken bands of scattered brown blotches. In the variety Fig. *a* the brown increases in quantity, the faint mottling is broken up, and, except on the under surface of the shell, is almost obliterated. In the shell represented at Fig. 5 *d* the brown is richer, more largely blotched, and the interstices between the blotches present only very faint indications of the mottled net-work. The species approaches very nearly in this state to the dark variety of *O. tremulina*, Fig. 5 *c*, which in being introduced in this plate was thought to belong to it. *O. Olympiadina* is always to be distinguished in addition to the above-named characters by the pure white enamel of the interior and columella, which latter is always more callous. The ground is always pure white, and even the dark brown painting is not unfrequently over-laid by a very thin milky coating of the same.

August, 1850.



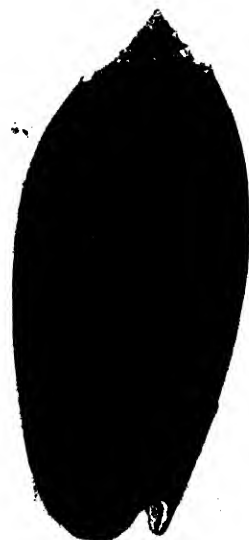
6. b.



6. c.



6. d.



6. e.

OLIVA.

PLATE IV.

Species 6. (Fig. *a*, *c*, and *d*, Mus. Steere; Fig. *b*, Mus. Cole, and Fig. *e*, Mus. Cuming.)

OLIVA TREMULINA. *Oliv. testā subelongato-cylindraceā, anfractibus posticè et ante medium leviter contractis, apice exserto, plicis columellaribus anterioribus fortiusculis; carneolo-albā, nigricante-fusco interruptè trifasciatā et dilutè longitudinaliter strigatā, strigis carneolo-nebulatis, valdè confusis, interdum undique intensè fuscā, hic illic carneolo-albo interruptā, columellā et aperturæ fauce albidis, plerumque carneo-rufescente tinctis.*

THE TREMBLING OLIVE. Shell somewhat elongately cylindrical, whorls slightly contracted posteriorly and before the middle, apex exserted, front columellar plaits rather strong; carnation-white, sometimes three-banded with dark brown, and painted longitudinally with blue-clouded streaks very much confused, sometimes dark brown throughout, interrupted

here and there with carnation-white, columella and interior of the aperture whitish, generally tinged with flesh-red.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 607.
Hab. Mauritius and Philippine Islands.

This well-known species has mostly a carnation-rouge tinge, but not a positive red interior as in *O. erythrostoma*. The specimens figured at 6 *c*, *d*, *e*, represent the ordinary state of it, densely clouded throughout with blue-shaded streaks and obscurely three-banded with dark-brown blotches. In Fig. *a*, *b*, the shell is entirely brown except in a few scattered patches, in which state it passes into the variety represented in the preceding plate at Fig. 5 *c*. This last variety, of which M. Ducloux represents a characteristic specimen at Pl. 11. f. 8 of his monograph, is generally of larger size and of more solid growth, presenting almost sufficient character to be regarded as a distinct species.

August, 1850.



7. b.



7. a.



7. c.



7. d.



7. e.



7. g.



7. f.

OLIVA.

PLATE V.

Species 7. (Fig. *a, e, f, g*, Mus. Cuming ;
Fig. *b, c, d*, Mus. Steere.)

Hab. Fig. *a, g*, Ceylon. Fig. *e, f*, Island of Mindanao,
Philippines (sandy mud, in deep water); Cuming.

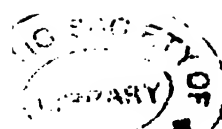
OLIVA ERYTHROSTOMA. *Oliv. testā oblongo-cylindraceā, crassiusculā, spirā exsertā, anfractibus posticè sæpè humidis, ad suturas contractis, plicis anticis columellaribus fortiusculis; carneolo-albā, cæruleo-viridi, vel olivaceo, vel purpureo nebulato-strigatā et trifasciatim maculatā, nonnunquam intensè fusco maculatā vel omnino fuscā, columellā lubroque carneolo-albis, aperturae faucē vividè rufā.*

THE RED-MOUTH OLIVE. Shell oblong-cylindrical, rather thick, spire exserted, whorls often swollen posteriorly, contracted at the sutures, front columellar plaits rather strong; carnelion-white, cloud-streaked and three-banded with blue-green, or olive, or purple, sometimes blotched with dark brown or altogether brown, lip and columella carnelion-white, interior of the aperture deep red.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x.
p. 606.

This fine species is distinguished from *O. tremulina*, its nearest ally, first, in the aperture being stained with deep red, secondly, in being mostly rather swollen posteriorly beyond the middle, and, thirdly, in exhibiting a greater variety of colouring in the painting. At Fig. *a, g*, the painting is simply purple-lake upon a white ground. At Fig. *b* the ground is carnelion, and the painting is of purple-lake shaded with a rich golden yellow. Fig. *c* represents a very richly painted dark olive-brown, blue-shaded upon a carnelion ground. At Fig. *d* the streaks are of a milky blue-green shaded with the same golden yellow as in the purple variety *b*. Fig. *e* is a variety very richly painted with dark in miscellaneous angular blotches, neither streaked, nor disposed in bands; and Fig. *f* is almost an uninterrupted brown, obscurely banded. These figures illustrate only a few of the most striking varieties of this beautiful species, which might be considerably added to if space permitted.

August, 1850.





8. b



8. a



8. c



9. a



9. b



8. d



9. c

OLIVA.

PLATE VI.

Species 8. (Fig. *a, b, d*, Mus. Steere; Fig. *c*,
Mus. Cuming.)

OLIVA IRISANS. *Oliv. testā elongato-cylindraceā, subangustā, spirā nunc acuminato-exsertā, nunc brevi, plus minus callosā, plicis columellaribus interdum subevanidis, albā vel carneolo-albā, strigis linearibus purpureo-olivaceis, viridi luteoque nebulatis, acutè undatis, plus minus bifasciatim reticulatis, nitidè pictā, nonnunquam inter-fusco aut nigricante omnino indutā, anfractuum margine spirali fusco punctato, columellā pallidè carneolā, aperturæ fauce cærulescente-albā.*

THE IRIDESCENT OLIVE. Shell elongately cylindrical, rather narrow, spire sometimes acuminately exserted, sometimes short and more or less callous, columellar plaits not unfrequently rather faint; white or carnation-white, neatly painted with purple-olive linear streaks, clouded with green and yellow, sharply waved, and more or less reticulately two-banded, sometimes altogether covered with yellow-brown or blackish, spiral edge of the whorls brown-dotted, columella pale carnation, interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 610.
Hab. Mauritius.

This appears to be a very well defined species, allied to *O. tremulina*, but uniformly of smaller size and narrower. The spire, mostly exserted, is sometimes short, buried nearly to the apex, as in Fig. *a*, by a callous deposit of enamel. The painting is distributed in a scattered interrupted zigzag style, rarely or never blotched, though mostly aggregated in bands about the middle and posterior portion of the shell. In Fig. *b* and *c* the streaks are dark olive, clouded, iris-like, with blue-green and yellow upon a warm carnation ground. In Fig. *a* the shell is pure

white, and the painting simple blue-purple. In Fig. *d* the pattern is entirely overlaid with a uniform yellow-brown coat, which in some specimens is nearer black.

Species 9. (Fig. *a, c*, Mus. Steere; Fig. *b*,
Mus. Cuming.)

OLIVA TEXTILINA. *Oliv. testā oblongo-cylindraceā, latiusculā, crassā, spirā breviusculā, aufractu ultimo in callositate ad extremitatem posticam aperturæ producto, plicis columellaribus fortiusculis; carneolo-albā, punctis lineisque punctorum nigris, angulato-reticulatis, interdum subpromiscuis, cinereo-nebulatis, plus minus saturatè bifasciatis, undique pictā, columellā et aperturæ fauce vividè carneolis.*

THE FINE-TEXTILE OLIVE. Shell oblong-cylindrical, rather broad, thick, spire rather short, last whorl produced into a callosity at the posterior end of the aperture, columellar plaits rather strong; carnation-white, painted throughout with black dots and lines of dots, angularly reticulated, sometimes rather promiscuous, ash-clouded, more or less darkly aggregated into two bands, columella and interior of the aperture bright carnation.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 606.
Hab. Islands of Ticao and Mindanao, Philippines (sandy mud in deep water); Cuming.

There is perhaps less variety in this species than in any other of the genus, the pattern consisting always of an angular ash-clouded net-work of dark dots, sometimes very regular and close-set, but more frequently promiscuous and confused in its arrangement. The shell is generally of large size, thick, and rather broad, the last whorl rising upon the spire into a callosity.



10. c.



10. d.



10. g.



10. f.

OLIVA.

PLATE VII.

Species 10. (Fig. 41 *a, b, c, d, f, g*, Mus. Steere;

Fig. *e*, Mus. Cuming.)

OLIVA MAURA. *Oliv. testā oblongo-ovalā, crassā, posticē tumidiusculā, juxta suturas contractā, spirā subdepressā, anfractu ultimo ad extremitatem posticam aperture in callositate erectā producto, plicis columellaribus subplanulatis, labro subplicato; cinereo-carneolā vel intensē olivaceā, vel nigrā, immaculatā aut fusco angulato-strigatā aut fulguratā, strigis interruptis, brevibus, interdum saturatē bifasciatis, columellā albā, basi pallidē sanguineo lineatā, aperturæ faucē carulescente-albā.*

THE MOOR OLIVE. Shell oblong-ovate, thick, rather swollen posteriorly, contracted next the sutures, spire rather depressed, last whorl produced at the posterior end of the aperture into an erect callosity, columellar plaits somewhat flattened, lip subPLICATE; ash-carnelion, or dark olive or black, sometimes unspotted, sometimes mottled with brown angular streaks, or lightning-marked, the streaks being interrupted, short, sometimes amalgamated darker with two bands, columella white, faintly tinged at the base with blood-red, interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 603.

Varictates.

Oliva fulminans, sepulchralis, and funebris, Lamarck.

Oliva leucostoma and *Macleaya*, DuRoi.

Hab. Ceylon, Mauritius, Philippines.

This species is extremely variable in its style of painting except in one important point, the base of the columella, which is, with rare exception, tinged with a blush of red. In other respects it varies chiefly as represented in the accompanying plate. Fig. *e* and *f* may be regarded as Lamarck's type of the species, dark black or olive, uniform and unspotted, while the zigzag lightning-marked pattern at Fig. *b* is his *O. fulminans*. The shell Fig. *a*, with black splashed bands and waved streaks, upon a mottled-olive ground, represents Lamarck's *O. funebris* and DuRoi's *O. leucostoma*; those at Fig. *c* and *g* with two obscure bands upon a mottled-olive ground, often lighter than here represented, the *O. Macleaya* of DuRoi; and the rich dark-olive variety with scattered indications of bands and waved streaks constitutes Lamarck's *O. sepulchralis*.

The *Oliva Maura* is mainly distinguished by its constancy of form, having always the same tumid growth towards the spire, which is rather depressed, and the same produced callous production of the last whorl at the posterior end of the aperture.

August, 1850.





11. b.



11. a.



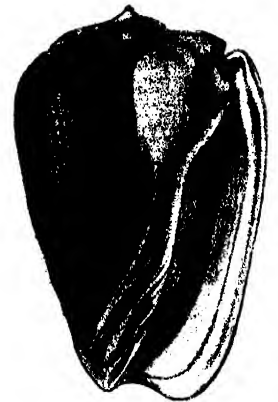
12. a.



13. a.



13. b.



13. c.

OLIVA.

PLATE VIII.

Species 11. (Fig. *a*, Mus. Steere; Fig. *b*, *c*,
Mus. Cuming.)

OLIVA FUSIFORMIS. *Oliv. testā fusiformi-ovatā, crassissimā, posticē tumidā, spirā subamplā, exsertā, plicis columellaribus posticis subcanidis; albā, rufescente-spardiceo undique longitudinaliter fulguratā, interdum bifasciatā, columellā et aperturæ faucē eburneis.*

THE FUSIFORM OLIVE. Shell fusiformly ovate, very thick, swollen posteriorly, spire rather large, exerted, posterior columellar plaits rather faint; white, longitudinally zigzag-streaked with reddish-fawn, sometimes two-banded, columella and interior of the aperture ivory-white.

LAMARCK, ANIM. SANS VERT. (Deshayes' edit.) vol. x.p. 618.
Hab. West Indies.

A very distinct species of stout solid growth, belonging to the same type as *O. reticularis* and *Julista*, in which the pattern is gathered along the spiral edge of the whorls into points of a darker colour.

Species 12. (Fig. *a*, Mus. Steere; Fig. *b*,
Mus. Cuming.)

OLIVA GIBBOSA. *Oliv. testā fusiformi-ovatā, obesā, crassissimā, valdē callosā, spirā acuminatā, columellā valdē callosā, plicis ferē occultis; cæruleā aut flavicante, nebulosā aut strigatā, fasciā luteā conspicuā, nigricante-fusco maculatā ad basin, spirā et columellā luteo-albidis, aperturæ faucē cærulescente-albā.*

THE GIBBOUS OLIVE. Shell fusiformly-ovate, stout, very thick, very callous, spire acuminate, columella very callous, plaits almost buried; blue or pale yellow, mottled or streaked, with a conspicuous black-

spotted yellow band at the base, spire and columella yellowish-white, interior of the aperture bluish-white.

Volula gibbosa, Born, Mus. Vind. p. 215.

Oliva cingulata, Chemnitz.

Volula utriculus purp., Gmelin.

Oliva utriculus, Chemnitz.

An eadem var.? *Olica nebulosa*, Lamarck.

Hab. Africa.

This and the following species are both remarkable for the callous deposit of enamel on the columella, which extends to and almost covers the spire.

Species 13. (Fig. *a*, *b*, Mus. Steere.)

OLIVA BRASILIENSIS. *Oliv. testā subtriangolo-ovatā, crassissimā, solidā, spirā plano-depressā, apicē subacutā, columellā valdē callosā, plicis ferē occultis; fulco-spardiceā, albo strigatā, lineis fusciscentibus capillaribus interruptis sub lente transversim notatā, zonā latā saturatiore ad basin.*

THE BRAZILIAN OLIVE. Shell somewhat triangularly ovate, rather thick, solid, spire flatly depressed, rather sharp at the apex, columella very callous, the plaits almost buried; fulvous-fawn, streaked with white, transversely marked, beneath the lens, with brown interrupted hair lines, and with a broad darker zone at the base.

CHEMNITZ, CONCH. CAB. vol. x. pl. 147. f. 1367, 1368.

Volula pinguis, Dillwyn.

Hab. Brazil.

A shell of very solid growth, remarkably characterized by its depressed callous spire.



14. b.



14. c.



15. a.



16. b.

OLIVA.

PLATE IX.

Species 14. (Fig. *a, b, c, e*, Mus. Cuning;
Fig. *d*, Mus. Steere.)

OLIVA PERUVIANA. *Oliv. testā ovalā, crassā, gibbosā, posticē tumidā, interdum annulatā, spirā breviusculā, columellā basin versus plicatā, suprā levigatā; purpurascēte vel purpurascēte-albā, purpureo-castaneo longitudinaliter fulguratā aut strigato-punctatā, interdum immaculatā, interdum omnino purpureo-castaneā, columellā albā, aperturā fauce purpurascēte tinctā.*

THE PERUVIAN OLIVE. Shell ovate, thick, gibbous, swollen posteriorly, sometimes annulated, spire rather short, columella plaited towards the base, smooth above; light purple or purplish white, longitudinally zigzag-marked or streak-dotted with purple-chestnut, sometimes unspotted, sometimes entirely purple-chestnut, columella white, interior of the aperture tinged with purple.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 617.
Eadem var. *Oliv. Senegalensis*, Lamarck.

Hab. Coquimbo, Copimpo, and Bay of Callao, Peru (in sandy mud, at depths varying from four to seven fathoms); Cuning.

The specimens selected for the illustration of this species are particularly characteristic of its varieties of painting, in which only two colours are employed. At Fig. *a* the shell is purplish-white, unspotted, whilst that at Fig. *c* is of a uniform dark purple-chestnut. At Fig. *b* the chestnut appears in bold distant zigzag stripes upon a light purple ground, which state of the species was named *O. Senegalensis* by Lamarck, from some erroneous information of its locality. Fig. *d* represents a variety with more of the chestnut colouring, broken up as it were into dots and short interrupted streaks; whilst in the shell represented at Fig. *e* the chestnut appears in very promiscuous and still smaller dots, overcharged with a general tinge of the same colour.

The form of this species varies in being sometimes very tumid, and produced into a ring towards the spire as indicated at Fig. *c*.

Species 15. (Fig. *a*, Mus. Steere; Fig. *b*,
Mus. Cuning.)

OLIVA JULIETA. *Oliv. testā ovalā, crassiusculā, medio tumidā, deinde spiram versus attenuatā, columellā multiplicalā, basi callosa-gibbosā; lutescente-albā, punctis grandibus nigricante-fuscis, carulco-nebulatis, interruptē angulatē dispositis, undique vividē pictā, fusco in maculis acuminatis juxta suturas, apice pallidē violaceo, basi maculā violaceā obscurē tinctā, columellā et aperturā fauce lutescente-albis.*

JULIET'S OLIVE. Shell ovate, rather thick, swollen in the middle, then attenuated towards the spire, columella many-plaited, callously gibbous at the base; yellowish-white, brightly painted throughout with large blue-clouded black-brown dots, arranged in confused or broken angles, the brown rising in acuminate blotches next the sutures, apex pale violet, base obscurely marked with a faint violet blotch, columella and interior of the aperture yellowish-white.

DUCLOS, Mon. Oliv. pl. 16. f. 3 and 4.

Hab. Real Llejos, Central America (in sandy mud, at the depth of six fathoms); Cuning.

This beautiful species bears the same relation to *O. reticularis*, through the variety named *O. venulata* by Duclos, represented at Fig. 16 *b* in the next plate, as *O. nobilis* has with *O. tremulina*. Regarded separately, the allied forms in both instances appear specifically distinct from each other, but it is impossible to deny that there is only one prevailing idea of form and pattern in each. The typical pattern of *O. reticularis* is a net-work composed of brown dots, gathered into lines or acuminate blotches at the sutures. The dots become larger, more confused or broken up, and more conspicuous, as in the variety *O. venulata*, Duclos; and the character of this passes by an easy transition into *O. Julieta*, distinguished by the same hieroglyphical marking at the base, and an indication of the violet blotch which is very characteristic throughout the series.



16. b



16. a



16. c



16. d



16. e



16. g



16. f

OLIVA.

PLATE X.

Species 16. (Fig. *a, b, c, e, g, i*, Mus. Cuming;
Fig. *d, f, h*, Mus. Steere.)

OLIVA RETICULARIS. *Oliv. testā ovatā, vel oblongā, vel elongato-cylindraceā, interdum posticè tumidā, apice exsertiusculā, plicis columellaribus numerosis, plurimis sæpè erianthis; albidā aut cinerascēte, fusco aut nigricante-fusco profusè acutè punctato-reticulatā, reticulā ad suturas lineatā aut acuminatā, columellā ad basin plerumque plus minus violaceo-fusco tinctā, aperturæ fauce albidā.*

THE RETICULATED OLIVE. Shell ovate, or oblong, or elongately cylindrical, sometimes swollen posteriorly, apex rather exserted, columellar plaits numerous, many of them frequently obscured; whitish or pale-ash, painted with a brown or black dotted net-work, which is gathered at the sutures into lines or acuminate blotches, columella mostly stained more or less with violet-brown, interior of the aperture whitish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 613. Varietates.

Oliv. araneosa, Lamarck.

Oliv. Timoria, venulata, obesina, and *pindarina*, Duclos.

Hab. Gulf of California; Donnet. Island of Granada, West Indies; J. Cuming.

The specimens represented in the accompanying plate are selected with the view of illustrating the different phases of this extremely variable species, that have been

distinguished by other specific names. Fig. *a* is Lamarck's type *O. reticularis*, narrow in its proportions, and mostly of smaller size, with the net-work more spaced, after the manner of *O. flammulata*, and the sutural lines of pattern more prolonged. Fig. *b* represents Duclos' *O. venulata*, in which the net-work is broken up into large blotches, and the basal violet-brown blotch rather prominent. Fig. *c* is the *O. obesina* of the same author, stouter and more gibbous in form, with the net-work somewhat similar but more or less obscured by an overcharge of milky-white enamel. Fig. *d*, the finest state of the species, of which a dark chestnut-coated variety is represented below at Fig. *g*, is Lamarck's *O. araneosa*, and has the net-work small, crowded, and confused. Fig. *e*, a remarkable form, in which the posterior portion of the shell is very stout and swollen, and the pattern small, confused, and partially banded, is Duclos' *O. Timoria*, though certainly not an inhabitant of Timor. Lastly, the oblong contracted variety, Fig. *f*, is the *O. pindarina* of the same author.

Besides the above-mentioned named varieties, are two very characteristic states of the species, Fig. *h, i*, in Pl. XI. In the former the net-work is peculiarly waved, and in parts is over-coated with streaks of bright chestnut; in the latter the shell is of a peculiar oblong-cylindrical form, and the net-work is small, confused, and aggregated in bands. This variety is not far removed from *O. splendida*.



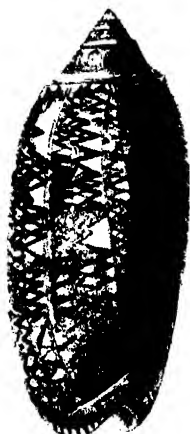
17. a



16. h



17. b



18.



19. a



19. b



16. c.

OLIVA.

PLATE XI.

Species 17. (Fig. a, b, Mus. Cuming.)

OLIVA SPLENDIDULA. *Oliv. testā cylindraceo-oblongā, spirā breviusculā, apice elato, plicis columellaribus subdistantibus; cinereo-alicante, fasciis duabus, alterā supra medium, alterā basali, maculis trigonis fuscis reticulatis, cingulatā, fasciarum interstitiis fusco-nigro sparsim punctatis et maculatis, apice basique purpureo-violaceis, apertura fauce lutescente-albā.*

THE SPLENDID OLIVE. Shell cylindrically oblong, spire rather short, apex raised, columellar plaits rather distant; ash-white, encircled with two bands, composed of triangular reticulated brown spots, one above the middle, the other basal, interstices between the bands sprinkled with black-brown spots and blotches, base and apex purple-violet, interior of the aperture yellowish-white.

SOWERBY, Tankerville Catalogue, App. p. 32.

Hab. Island of Tobago, Bay of Panama (in sandy mud at low water); Cuming.

This fine species belongs to the same type as the preceding, *O. reticulata*. It is distinguished by a peculiarity of marking, which is constant in all specimens, consisting of two broad confused brown bands, of which the interstices are sprinkled with curved linear dots and triangular blotches. The spire is short and rounded, with the apex raised, which, together with the base of the columella, is tinged with purple-violet.

Species 18. (Mus. Cuming.)

OLIVA LITERATA. *Oliv. testā elongatā, spirā exsertā, plicis columellaribus interdum subocculis; pallidē spadiceā, lutescente partim tinclā, reticulā fuscā subamplā, acutē trigonā, bifasciatim dispositā, hic illic characteribus castaneis inscriptā, ornatā, columellā albā, apertura fauce violidē violaceā.*

THE LETTERED OLIVE. Shell elongated, spire exserted,

columellar plaits sometimes rather concealed; light fawn-colour, partially tinged with yellow, ornamented with a rather large brown net-work, sharply triangular, disposed so as to show two bands, marked here and there with chestnut characters, columella white, interior of the aperture deep violet.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 614. *Hab.* West Indies.

Belonging also to the type of *O. reticulata*, to which species it more closely approximates than *O. splendidula*. In form it is peculiarly elongated, the net-work is of rather a large flame-pattern, showing two bands, which are marked here and there with dark characters. The aperture is characterized by a deep tinge of violet.

Species 19. (Mus. Cuming.)

OLIVA CUMINGII. *Oliv. testā cylindraceo-oblongā, posticē tumidā, rotundatā, spirā brevi, apice subexserto, acuto, plicis columellaribus planulatis, subocculis, columellā basi tumidā; aurantio-erectā, castauro et nigricante-fusco, immaculato, rarē fasciatā, columellā basi livido-purpurascente pallidē tinclā, apertura fauce corrucescente-albā.*

CUMING'S OLIVE. Shell cylindrically oblong, swollen posteriorly, rounded, spire short, apex rather exserted, sharp, columellar plaits flattened, almost concealed, columella swollen at the base; orange-saffron colour, variously banded with unspotted chestnut and blackish-brown, base of the columella faintly tinged with livid-purple, interior of the aperture bluish-white.

Hab. Gulf of California; Donnet.

This appears to be very distinct from any species yet described, and is remarkable for the absence of any pattern of marking in the painting, which is of a warm orange-saffron hue, simply cross-banded.





20. b.



20. a.



20. c.



22. a.



21. a.



22. b.



21. b.

OLIVA

PLATE XII.

Species 20. (Fig. *a, b, c*, Mus. Steere.)

OLIVA ELEGANS. *Oliv. testā cylindraceo-ovalā, medio tumidiusculā, spirā brevi, anfractu ultimo ad extremitatem posticam aperturā in callositate erectā producto; virescente aut lutescente-albā, strigis olivaceo-viridibus, cæruleo et croceo-rufo nebulatis, interdum fusco-nigro acutè promiscuè undatā, columellā basi pallidè sanguineo tinctā, aperturā fauce cærulescente-albā.*

THE ELEGANT OLIVE. Shell cylindrically ovate, rather swollen in the middle, spire short, last whorl produced into an erect callosity at the posterior end of the aperture; greenish or yellowish-white, sharply promiscuously waved with olive-green or brown-black streaks, clouded with blue and saffron-red, columella faintly tinged at the base with a blush of blood-red, interior of the aperture bluish-white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 611.
Hab. Feejee Islands.

This species is chiefly distinguished from those which accompany it in the plate, by its shorter and more tumid growth, and the erect callous production of the last whorl upon the spire, which is proportionably depressed. The specimen represented at Fig. *a* is promiscuously waved with dark green broken streaks, clouded with blue and saffron-red; that at Fig. *b, c* presents the same colouring overlaid with a profusion of rich black-brown zigzag

Species 21. (Fig. *a, b*, Mus. Steere.)

OLIVA TIGRINA. *Oliv. testā cylindraceo-ovalā, medio tumidā, subinflatā, spirā brevi, anfractu ultimo ad extremitatem posticam aperturā calloso-producto, plicis columellaribus plus minus occultis; cinerascens-albā, maculis parvis cærulescente-griseis profusè marmoratā, interdum nigro-fusco omnino indutā, columellā basi pallidè sanguineo tinctā, aperturā fauce cærulescente-albā.*

THE TIGER-SPOTTED OLIVE. Shell cylindrically-ovate, swollen in the middle, rather inflated, spire short, last whorl callously produced at the posterior end

of the aperture, columellar plaits more or less faint; ashy white, profusely mottled with small blue-grey spots, sometimes covered entirely with black-brown, columella faintly tinged at the base with a blush of blood-red, interior of the aperture bluish-white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 623.

Hab. Madagascar.

Distinguished mainly by its swollen growth, being uniformly of larger size than the preceding species, and by its livid grey aspect of colour, except when altogether black-brown, as it not unfrequently is.

Species 22. (Fig. *a, b*, Mus. Steere.)

OLIVA TRICOLOR. *Oliv. testā cylindraceo-oblongā, interdum subangustā, spirā breviusculā, peculiariter callosā, plicis columellaribus basin versus fortiusculis; albida aut virescente, cæruleo et croceo-rufo profusè nebulatā, viridi marmoratā et fasciatā, spirā nigro obliquè tessellatā.*

THE TRI-COLOURED OLIVE. Shell cylindrically oblong, sometimes rather narrow, spire rather short, peculiarly callous, columellar plaits rather strong towards the base; whitish or greenish, profusely clouded with blue and saffron-red, marbled and banded with green, spire obliquely tessellated with black, base of the columella tinged with a blush of blood-red, interior of the aperture white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 615.

Varietas. *O. Philantha*, Duclou.

Hab. Mauritius.

The colouring of this species consists of a profuse mottling of clouded blue and saffron-yellow spots, with, in most specimens, a large proportion of green, showing two bands, one round the middle of the shell, and one beneath the sutures; but the most characteristic feature of the species consists in the spire being obliquely tessellated with black, and a slight mixture of saffron-red.



23. a



23. b



24. b



25. a



25. b



26. a



26. b



26. c



26. d

OLIVA.

PLATE XIII.

Species 23. (Mus. Steere.)^{*}

OLIVA MUSTELINA. *Oliv. testā cylindraceo-oblongā, spirā plano-depressā, apice acutā, anfractu ultimo posticē subproducto, plicis columellaribus numerosis; lutescente, strigis angustis flexuosis numerosis promiscuē pictā, columellā albicante, aperturæ fauce violaceā.*

THE WEASEL-LIKE OLIVE. Shell cylindrically oblong, spire flatly depressed, sharp at the apex, last whorl somewhat produced posteriorly, columellar plaits numerous; yellowish, promiscuously painted with numerous flexuous narrow streaks, columella whitish, interior of the aperture violet.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 616.

Hab. Singapore (in fine sand at a depth of about seven fathoms); Cuming.

There is little variation in this species, which is well characterized by its straight cylindrical form, depressed spire, flexuous line painting, and violet interior.

Species 24. (Fig. a, b, c, Mus. Steere; Fig. d. Mus. Cuming.)

OLIVA EPISCOPALIS. *Oliv. testā subelongato-oblongā, crassissimā, spirā exsertā, apice acutā, plicis columellaribus fortibus; albā, punctis aut lineis brevibus interruptis cæruleo et croceo-rufo nebulatis promiscuē pictā, interdum livido-olivaceo saturatē variegatā, aperturæ fauce intensē violaceā.*

THE EPISCOPAL OLIVE. Shell rather elongately oblong, very thick, spire exserted, sharp at the apex, columellar plaits strong; white, promiscuously painted with blue and saffron-red clouded dots and short interrupted lines, sometimes darkly variegated with livid-olive, interior of the aperture very deep violet.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 611.

Varietas. *O. lugubris*, Duclos.

Hab. North Australia; Jukes.

A species of very solid growth, prominently distinguished by the very deep violet colouring of the interior. The specimens Fig. c, d represent the typical state of the species. Fig. a, b represents a dwarf variety (*O. lugubris*, Duclos), in which there is an unusually copious supply of the dark livid-olive painting.

Species 25. (Fig. a, b, Mus. Steere.)

OLIVA SANGUINOLENTA.* *Oliv. testā cylindraceo-oblongā,*

basi subabbreviatā, spirā brevi, depressā, anfractu ultimo ad extruditatem posticam aperturæ calloso, plicis columellaribus subplanulatis; albidd, lineis olivaceis undatis, nunc minutis numerosissimis confertis, nunc grandibus plus minus distantibus, ornatā, columellā et callositate posticā sanguineo-rufescentibus, aperturæ fauce cærulescente-albā.

THE BLOODY OLIVE. Shell cylindrically oblong, somewhat shortened at the base, spire short, depressed, last whorl callous at the posterior end of the aperture, columellar plaits rather flattened; whitish, ornamented with waved olive lines, which are sometimes minute, very numerous and close-set, sometimes large and more or less distant, columella and posterior callosity blood-red, interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 615.

Hab. Island of Negros, Philippines (in sandy mud at low water); Cuming.

Several species of the genus are characterized by a tinge of red at the base of the columella, but in this the whole of the columella is of a uniform blood-red, and this colour not unfrequently appears in the callosity of the spire and along the outer lip.

Species 26. (Fig. a, b, Mus. Cuming; Fig. c, Mus. Steere.)

OLIVA BULBIFORMIS. *Oliv. testā abbreviato-oratā, tumidā, crassiusculā, spirā brevi, parvā, plicis columellaribus plus minus callosis; griseo-lutescente, olivaceo varic maculatā et reticulatā, plerumque bifasciatā, columellā basi interdum pallidissimē sanguineo lineatā, aperturæ fauce cærulescente-albā, interdum livido-violascente.*

THE BULB-SHAPED OLIVE. Shell abbreviately ovate, swollen, rather thick, spire short, small, columellar plaits more or less callous; greyish-yellow, variously spotted and reticulated with olive, generally two-banded, columella sometimes very faintly tinged with red, interior of the aperture bluish-white, sometimes livid violet.

DUCLOS, Mon. Oliv. pl. 27. f. 10 to 13.

An varieties? *O. dactyliota* and *Caroliniana*, Duclos.

Hab. Moluccas.

This species may be readily distinguished by its swollen bulbous form, varying more or less in convexity.



29. a



29. b



29. c



30. a



30. b



30. c

OLIVA.

PLATE XIV.

Species 27. (Mus. Steere.)

OLIVA SCRIPTA. *Oliv. testā cylindraceo-oblongā, posticē latiusculā, spirā acuminatā autem depressā, plicis columellaribus parvis, numerosis; lutescente, fuscescēte undique pallidē reticulatā, characteribus fuscis acutē nudatis bifasciatis sparsim notatā, columellā et aperturā fauce cærulescente-albis.*

THE INSCRIBED OLIVE. Shell cylindrically oblong, rather broad posteriorly, spire acuminate but depressed, columellar plaits small, numerous; yellowish, faintly reticulated throughout with pale brown, sparingly marked with brown waved characters in two bands, columella and interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 615.
Hab. — ?

Very closely resembling *O. literata* in its style of painting, but uniformly of smaller size, and less elongately acuminate. The shell is broader beneath the sutures, the spire being a little depressed, and has more the form of *O. mustelina*.

Species 28. (Fig. a, Mus. Steere; Fig. b, Mus. Pickering.)

OLIVA HARPULARIA. *Oliv. testā oblongo-ovatā, posticē tumidiusculā, spirā exsertā, plicis columellaribus ferē occultis; albā, lineis fuscis plurimis flexuosis longitudinaliter pictā, columellā et aperturā fauce albis.*

THE HARP-STRUNG OLIVE. Shell oblong-ovate, posteriorly rather swollen, spire exserted, columellar plaits almost concealed; white, painted longitudinally with numerous brown flexuous lines, columella and interior of the aperture white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 620.
Hab. — ?

I have felt some hesitation in publishing this species, because the shells, of which only three are known in this country (the third in the British Museum), have very much the appearance of being uncoated and polished. It was, however, described by Lamarck, and figured some years before by Chemnitz in a plate of miscellaneous un-named Olives which he termed remarkable varieties, "*varietates notabiles Oliveæ*." It belongs to the *O. reticulata* type, and is characterized by numerous long flexuous markings

which may or may not be the outer natural coating of the species.

Species 29. (Fig. a, Mus. Steere; Fig. b, c, Mus. Cuming.)

OLIVA POLPASTA. *Oliv. testā ovatā, crassā, ponderosā, posticē obesā, tumidā, spirā breviusculā, apice obtusā, plicis columellaribus numerosis, brevibus, anticis interdum subplanatis; cinereo-olivaceā, maculis hieroglyphicis punctisque nigris obliquē notatā, maculis lutescentibus ad suturas reticulatis, columellā et aperturā fauce cærulescente-albis.*

THE TUMID OLIVE. Shell ovate, thick, ponderous, stout and swollen posteriorly, spire rather short, obtuse at the apex, columellar plaits numerous, short, anterior plaits sometimes rather flattened; ash-olive, obliquely marked with hieroglyphic spots and dots, with yellowish reticulated spots next the sutures, columella and interior of the aperture bluish-white.

DUCLOS, Mon. Oliv. pl. 16. f. 1.

Hab. Bay of Montija, Veragua, Central America (in sandy mud at a depth of about thirteen fathoms): Cuming.

It is not difficult to connect this Olive, as well as *O. Julieta*, with *O. reticulata*, in both of which forms the network of the typical species is broken up into a confusion of dots and dashes.

Species 30. (Fig. a, Mus. Cuming; Fig. b, c, d, Mus. Steere.)

OLIVA CRUENTA. *Oliv. testā oblongo-cylindraceā, spirā plerumque acuminatā, interdum supra medium annulatā, apice acutā, plicis columellaribus numerosis, subirregularibus, duplicatis; fuscescēte-lactēā aut rubescēte, guttis obscurē violaceo-purpureis undique notatā, guttis ad suturas et ad basin intensē violaceo-purpureis, interdum purpurnascente-carneo marmoratā aut reticulatā, aperturā fauce sapiissime aurantiā.*

THE SPOTTED OLIVE. Shell oblong-cylindrical, spire generally acuminate, sometimes annulated above the middle, sharp at the apex, columellar plaits numerous, somewhat irregular, duplicate, pale brownish cream-colour or ruddy, marked throughout with obscure violet-purple spots, which are deep violet-purple

round the base and at the sutures, sometimes mottled or reticulated with purple-flesh colour.

Voluta cruenta, Dillwyn, Catalogue of Shells, vol. i. p. 514.

Oliva guttata and *leucophaea*, Lamarck.

Oliva maculata and *mantichora*, Duclos.

Eadem var. *Voluta annulata*, Gmelin.

Hab. Zanzibar, East Africa; Thorn. Australia; Jukes. Island of Siquijor, Philippines (on sand-banks at low water); Cuming. Society Islands (in coral sand at low water); Cuming.

This is a species of a very distinct character, and stands alone in the genus. The typical variety, Fig. 30 *a*, is of a brownish cream-colour, covered with violet-purple spots, which are obscured by an overcoating of cream-colour, except round the base and along the edge of the whorls next the sutures. Fig. 30 *b*, *c*, represent a state of the

species (*O. mantichora*, Duclos) in which the shell is mottled with a delicate flesh-purple net-work, and the spots are smaller, patched with white and scattered more irregularly. In the variety at Fig. 30 *d* (*O. leucophaea*, Lamarck) the spots have the character of scattered triangular blotches, and the ground is frequently of a ruddy tinge. Sometimes the shell is characterized by a more or less obsolete ring, which variety Gmelin named *V. annulata*.

The *O. cruenta* has a remarkably wide range. At the Society Islands it occurs in the fine state represented at Fig. *a*. At Zanzibar the shell is nearly colourless, the spots being only faintly indicated and fewer in number. The specimens from the Philippines are of a warm hue, but nearly colourless; while those from Australia are small and characterized by the confused style of painting represented at Fig. *b*, *c*.



31. b.



31. a.



31. c.



31. d.



31. e.



31. f.



31. g.

OLIVA

PLATE XV.

Species 31. (Fig. *a, b, c, d, e, f*, Mus. Steere;
Fig. *g*, Mus. Cuming.)

OLIVA INFLATA. *Oliv. testā ovalā, inflatā, medio gibbosā, crassissimā, spirā depresso-planā, apice elato, acuto, onfractu ultimo ad extremitatem posticam aperture calloso-producto, columellā tuberculis duobus callosis armatā, plicis subocculis; cinerascens-albā, griseo punctatā, nigro-fusco fulguratā, aut maculatā, aut fasciatā, interdum cæruleo-olivaceo et aurantio nebulatā, vel omnino nigro-fuscā, vel eburneā, tuberculis interdum livido-fusco tinclis.*

THE INFLATED OLIVE. Shell ovate, inflated, gibbous in the middle, very thick, spire depressly flattened, apex raised, sharp, last whorl callously produced at the posterior end of the aperture, columella armed with two callous tubercles, plaits rather faint; ash-white, dotted with grey, lightning-marked or blotched or banded with black-brown, sometimes clouded with blue-olive and orange, or altogether

black-brown or ivory-white, tubercles sometimes tinged with livid-brown.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 619.

Varieties. *Oliva nudata* and *bicincta*, Lamarck.

Hab. Zanzibar; Thorn.

The form of this species is very characteristic, being invariably distinguished by its swollen gibbous growth and by the presence of two plicate tubercles upon the columella. The painting is extremely variable, and its varieties have been selected to characterize different species. Fig. *a*, mottled with grey dots and encircled by two broad splashed brown bands, represents Lamarck's *O. bicincta*, whilst the specimens Fig. *d, f, g*, dotted and lightning-marked with black-brown upon a greyish-white ground, belong to his *O. nudata*. The varieties Fig. *b, c* are very richly banded, clouded, and zigzag-marked with livid-blue, olive, and orange. Fig. *e* represents a broad-streaked and zigzag brown-black painted variety. Sometimes the species is entirely black, sometimes entirely white.

September, 1850.





32. b.



33. a.



33. b.



33. c.



33. e.



33. d.

OLIVA.

PLATE XVI.

Species 32. (Fig. *a*, *b*, Mus. Cuming.)

OLIVA NEBULOSA. *Oliv. testā cylindraceo-oblongā, tumidiusculā, interdum subangustā et acuminatā, columellā basin versus concavo-depressā, plicis columellaribus numerosis, confertis; cærulescente-albā, griseo-cæruleo nebulatā aut strigatā, zonā fulvā, fusco flammulatā, ad basin, columellā cærulescente-albā, maculā purpurā basin versus notatā.*

THE CLOUDED OLIVE. Shell cylindrically oblong, rather swollen, sometimes rather narrow and acuminate, columella concavely depressed towards the base, columellar plates numerous, close-set; bluish-white, clouded and streaked with grey-blue, with a fulvous band, flamed with brown, at the base, columella bluish-white, marked with a purple spot towards the base.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 628.
Hab. — ?

M. DuRoi regards this species as the young of *O. gibbosa*, and I have myself quoted it with doubt as a variety; it appears, however, to be distinct, especially as regards the narrow form represented at Fig. 32 *b*. Both varieties are distinguished by a characteristic purple spot towards the base of the columella.

Species 33. (Fig. *a*, *c*, Mus. Steere; Fig. *b*, *e*, Mus. Cuming.)

OLIVA ACUMINATA. *Oliv. testā elongatā, angustā, spirā exsertā, acuminatā, plicis columellaribus numerosis, basi callosa-contortis; purpurascēte-spadicēā, maculis parvis perpaucis pallidis aspersā, ad suturas reticulatā, zonā latā spadicēā, interdum interruptā, ad basin cingulatā, columellā et aperturæ faucē cærulescente-albis.*

THE ACUMINATED OLIVE. Shell elongated, narrow, spire exerted, acuminate, columellar plaits numerous, callously twisted at the base; purplish-fawn, sprinkled with a few small pale spots, marked with a network pattern at the sutures, and encircled at the base with a broad fawn zone, which is sometimes

interrupted with light splashes, columella and interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 625.

Eadem var. *Oliv. luteola*, Lamarck.

Hab. Senegal, north-west coast of Africa.

In the young state of this species the delicate net-work beneath the sutures is elaborately constructed, and the middle portion of the shell is frequently marked with interrupted zigzag streaks. After the first few whorls this design of pattern becomes obscured.

Species 100. (Fig. 33 *d*, Mus. Steere.)

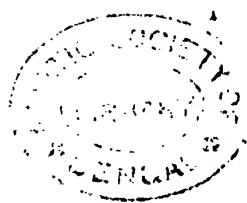
OLIVA SUBULATA. *Oliv. testā elongatā, angustā, tenuiusculā, subventricosā, spirā exsertā, acuminatā, plicis columellaribus ad basin callosa-contortis; fulco-spadicēā aut griseo-cærulescente, maculis parvis albidis umbratis notatā, strigis brevibus nigricantibus oblique concentricis infra suturas, zonā latā spadicēā ad basin cingulatā, columellā et aperturæ faucē cærulescente-albis.*

THE SUBULATE OLIVE. Shell elongated, narrow, rather thin, slightly ventricose, spire exerted, acuminate, columellar plaits callously twisted at the base; fulvous-fawn or grey-blue, marked with small whitish shaded spots, with short obliquely concentric blackish streaks beneath the sutures, encircled with a broad fawn band at the base, columella and interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 626.

Hab. Bencoolen, west coast of Sumatra (in sandy mud at low water); Cuming.

The irregular numbering of this species arises from the circumstance of my having completed the arrangement of the genus before discovering that Lamarck's *O. subulata* is truly distinct from his *O. acuminata*. It is a more ventricose, thinner shell, marked next the sutures with short obliquely concentric streaks in place of network, and inhabits a widely different locality.





34. c.



34. d.



34.



34. e.



34. f.



34. g.

OLIVA

PLATE XVII.

Species 34. (Fig. *a, e, h*, Mus. Cuming.

Fig. *b, c, d, g, i, k*, Mus. Steere.)

OLIVA ISPIDULA. *Oliv. testā oblongā vel elongato-oblongā, cylindricā, crassiusculā, spirā brevi, versus apicem exertā, columellā subdepressā, callosā, plieis plus minus obscuris; albā, vel lutescente, vel aurantiā, vel cinerā, punctis aut maculis linearibus transversis fuscis notatā, interdum nigro-fusco fasciatā aut variè maculatā, columellā eburneā, aperturæ fauce chocolato-fusā.*

THE VARICOLOURED OLIVE. Shell oblong or elongately oblong, cylindrical, rather thick, spire short, exerted towards the apex, columella rather depressed, callous, with the plaits more or less obscure; white or yellowish, or orange, or ash, marked with brown dots and transverse linear spots, sometimes banded or variously blotched with black-brown, columella ivory-white, interior of the aperture chocolate-brown.

Falata ispidula, Linnaeus, Syst. Nat. 12th edit. p. 1188.

Olivā ispidula, Lamarck.

Varieties, *O. candida*, and *oriola*, Lamarck.

Olivā flaveola, stellata und *tigridella*, Duclos.

Hab. Philippine Islands.

It is almost labour in vain to describe the external colouring of this species, which is the most variable of the

genus, and does not appear to follow any particular design. The colouring of the interior of the shell is extremely characteristic, being with rare exception of a uniform chocolate-brown. Fig. *a* (*Olivā tigridella*, Duclos) is splashed with triangular blotches of black-brown upon a warm cream-coloured ground. Fig. *b*, a very uncommon variety, is encircled with livid blue and reddish pencil-bands. Fig. *c* is very lightly mottled throughout with black-brown. Fig. *d* (*Olivā stellata*, Duclos) is ivory-white, sparingly marked with sharp hieroglyphic dashes of violet-shaded black-brown. Fig. *e* (*Olivā flaveola*, Duclos) is of a warm uniform orange tint. Fig. *f* is of a mingled ash and yellow ground covered with black-brown dashes, and encircled with a broad band of the same colour beneath the sutures. Fig. *g* is of a livid ash-colour speckled here and there with dark dots. Fig. *h* (*Olivā tigridella*, Duclos) is almost entirely black-brown. Fig. *i* is of an opaque livid grey, with a few scattered dots of darker colour; and Fig. *k* is of a warm yellowish hue, closely dotted and mottled throughout with olive and dark olive-black. The pure white state of the species has been named *O. candida* by Lamarck, whose *O. oriola* appears to be another variety wanting the rich chocolate-brown interior. The shell figured for *O. oriola* by Duclos is probably a variety of *O. reticulata*.



35



37



38. a



38. b



39

OLIVA

PLATE XVIII.

Species 35. (Fig. *a, b*, Mus. Steere.)

OLIVA HIATULA. *Oliv. testâ sulfusiiformi-ovalâ, ventricosa, spirâ subacuminatâ, columellâ elevatâ, plicis distinctis, peculiariter calloso-contortis, aperturâ patulâ, supernè emarginatâ; spadiceo-griseâ, punctis strigisque ceruleo-fuscis apicem versus subobscurè notatâ, zonâ latâ fulvâ ad basin cingulatâ, columellâ livido-purpurascente, aperturæ fauce livido-fuscâ.*

THE Gaping OLIVE. Shell somewhat fusiformly ovate, ventricose, spire somewhat acuminate, columella raised, plaits distinct, peculiarly callously twisted, aperture wide open, emarginated at the upper part; fawn-grey, somewhat obscurely marked towards the apex with blue-brown dots and streaks, and encircled round the base with a broad fulvous zone, columella livid-purple, interior of the aperture livid-brown.

Hiatula hiatula, Gmelin, Syst. Nat. p. 3442.

Olivâ hiatula, var. *b*, Lamarck.

L. Agaron, Adanson.

Ancilla maculata, Schumacher.

Hiatula Lamarckii, Swainson.

Hab. Senegal and Mouth of the Gambia, West Africa.

This and the following species were confounded together by M. Ducloux, but they are quite distinct and inhabit very remote localities. The true *O. hiatula* (pl. 3. fig. 15, of his monograph) chiefly characterized by the raised constricted growth of the columella and by its livid-purple colouring, is from the west coast of Africa, collected by Adanson at Senegal, and by later travellers at the mouth of the Gambia. *O. testacea* (pl. 4. fig. 19, 20, of Ducloux' monograph), concerning which Lamarck especially notices the dark brown colouring of the spire and base of the last whorl, was collected by Humboldt and Bonpland on the shores of Mexico, and more recently by Mr. Cuming in the same locality at Real Llejos.

Species 36. (Mus. Cuming.)

OLIVA TESTACEA. *Oliv. testâ fusiformi-ovalâ, ventricosa, spirâ acuminatâ, plicis columellaribus calloso-contortis, aperturâ patulâ, supernè emarginatâ; cinereo-griseâ, lineis flexuosis fuscis ceruleo-umbratis plus minus obscure pictâ, apicem versus et ad basin fumeo-fuscâ, columellâ albâ, aperturæ fauce violaceo-fuscâ.*

THE TESTACEOUS OLIVE. Shell fusiformly ovate, ventri-

cose, spire acuminate, columellar plaits callously twisted, aperture wide open, emarginated at the upper part; ash-grey, more or less obscurely painted with blue-shaded brown flexuous lines, smoky-brown at the base and towards the apex, columella white, interior of the aperture violet-brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 627.

Olivâ hiatula, *pars*, Ducloux.

Hab. Real Llejos, Mexico (in sandy mud at a depth of about six fathoms); Cuming.

Of a more acuminate form than the preceding species, from which it is further distinguished by its smoky or purple-brown colouring, and white columella. It may be observed that the localities of the two species are very remote from each other.

Species 37. (Mus. Steere.)

OLIVA STEERIE. *Oliv. testâ oblongo-ovalâ, ventricosa, spirâ brevi, acutâ, columellâ medio depressâ, supernè callosâ, plicis calloso-contortis; griseo-fuscâ, obscure maculatâ, spirâ et zonâ basali faveo-fuscis, interdum ceruleo-cente-lactè, immaculatâ, columellâ eburnè, aperturæ fauce intense purpureâ.*

STEERE'S OLIVE. Shell oblong-ovate, ventricose, spire short, sharp, columella depressed in the middle, callous at the upper part, plaits callously twisted; greyish-brown, obscurely spotted, spire and basal zone smoky-brown, sometimes bluish cream-colour, unspotted, columella ivory-white, interior of the aperture deep purple.

Olivâ hiatula, *pars*, Ducloux.

Hab. Mouth of the Gambia, West Africa.

The *O. Steerie* is chiefly distinguished from *O. hiatula* of the same locality, by its depressed white columella, whilst the general colouring of the shell is more like that of the Mexican *O. testacea*. It differs, however, from the last-named species both in the depression of the columella, which gives it a boat-shaped form, and in having a shorter spire. The coloured state of *O. Steerie* is well represented by Ducloux, under *O. hiatula*, Mon. Oliv. pl. 3. f. 14. The specimen figured in the accompanying plate, represents a variety in which the entire surface of the shell is overlaid with a milk-white coating, and the interior richly purple-enamelled.

I have the pleasure to name this fine species in honour of Miss Steere, a lady whose magnificent collection of Olives, and nice discrimination of their varieties of character, have been of essential service to me in the preparation of this monograph.

Species 38. (Mus. Steere.)

OLIVA AQUATILIS. *Oliv. testā ovatā, ventricosā, subtilis concavā, spirā brevi, callosā, columellā medio depressā, supernè callosā, plicis parvis, numerosis, duabus basilibus fortioribus, aperturā patulā; griseo-carrulescente, strigis flexuosis saturatioribus undique pictā, zonis duabus, alterā fulvā, alterā livido-purpureā, cingulatā, columellā albā, aperturā fauce livido-purpurascēte.*

THE RIPPLED OLIVE. Shell ovate, ventricose, concave beneath, spire short, callous, columella depressed in the middle, callous at the upper part, plaits small, numerous, two basal plaits stronger, aperture wide open; greyish-blue, painted throughout with flexuous streaks of a darker grey-blue, encircled at the base with two zones, one of which is fulvous, the other livid-purple, columella white, interior of the aperture tinged with livid-purple.

Olive auricularia, Duclos (not of Lamarck).

Hab. Brazil.

The form *O. aquatilis* is just intermediate between that

of the foregoing species and of the following; and it is further characterized by the rippled painting and divided colouring of the broad basal enamel zone.

Species 39. (Mus. Cuming.)

OLIVA AURICULARIA. *Oliv. testā depresso-ovatā, latā, ventricosā, subtilis concavā, spirā brevissimā, callositate occultā, columellā medio depressā, supernè valdè callosā, verrucosā, plicis parvis, ferè occultis, duabus basilibus validis, aperturā patulā; cærulescente-grisei zonā basali latā, livido-fuscescente, columellā albā, aperturā fauce livido-fuscescente.*

THE EAR-SHAPED OLIVE. Shell depressly ovate, broad, ventricose, concave beneath, spire very short, concealed by callosity, columella depressed in the middle, very callous at the upper part, warty, plaits small, almost concealed, two basal plaits strong, aperture wide open; bluish-grey, broad basal zone livid-brown, columella white, interior of the aperture pale livid-brown.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 625.

Olive patula, Sowerby.

Olive clancophila, Duclos.

Hab. Brazil.

This shell is remarkably distinguished by its broad gibbous growth, and enormous callous deposit on the upper part of the columella.



41.



40. a.



42. a.



42. b.



43. a.



43. b.



40. b.



45. b.



45. a.

OLIVA.

PLATE XIX.

Species 40. (Fig. a, b, Mus. Steere.)

OLIVA STAINFORTHII. *Oliv. testā ovalā, crassā, supra medium peculiariter tumidā, spirā brevi, acuminatā, plicis columellaribus fortibus, latiusculis; albā, punctis rufescentibus, griseo-umbratis, evanidē aspersā, maculis perpaucis nigricantibus sparsim bifasciatim notatā, juxta suturas immaculatā, columellā et aperturā fauce eburneis.*

STAINFORTH'S OLIVE. Shell ovate, thick, peculiarly swollen above the middle, spire short, acuminate, columellar plaits strong, rather broad; white, faintly sprinkled with grey-shaded reddish dots, and marked with a very few blackish blotches disposed in two bands, unspotted next the sutures, columella and interior of the aperture ivory-white.

Hab. —?

A new and very distinct species, in the collection of Miss Steere, which gives me an opportunity of recording my sense of the valuable additions which have been made to our knowledge of this genus by the communicated experience of the Rev. F. J. Stainforth.

Species 41. (Mus. Steere.)

OLIVA FLAMMULATA. *Oliv. testā cylindraceo-ovalā, spirā subacuminatā, plicis columellaribus subevanidis; albidā, carneo-fusco reticulatā, areis reticulatis hic illic peramplis, columellā basi fuscescente tinctā, aperturā fauce albā.*

THE FLAME-MARKED OLIVE. Shell cylindrically ovate, spire somewhat acuminate, columellar plaits rather faint; whitish, reticulated with flesh-brown, the reticulated spaces being here and there very large, columella tinged with light brown, interior of the aperture white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 613.
Hab. West Indies.

This species is very closely allied to *O. reticulata*, but differs in not having the net-work gathered in clusters of lines at the sutures. The net-work spaces are here and there remarkably large, especially on the upper surface of the last whorl, which, in the accompanying figure, has been inadvertently turned from the observer.

Species 42. (Fig. a, Mus. Steere; Fig. b, Mus. Cuming.)

OLIVA AUSTRALIS. *Oliv. testā oblongo-cylindraceā, spirā exsertā, columellā medio subcompressā, plicis numerosis, ætate citō evanidis; albidā, lineis undulatis cinereo-purpureis, sæpè promiscuis, ornatā, anfractuum margine suturali punctato, columellā et aperturā fauce eburneis.*

THE SOUTHERN OLIVE. Shell oblong-cylindrical, spire exserted, columella slightly compressed in the middle, plaits numerous, soon fading with age; whitish, ornamented with waved purple-ash lines, which are often promiscuous, sutural edge of the whorls dotted, columella and interior of the aperture ivory-white.

DUCLOS, Mon. Oliv. pl. 8. f. 3, 4.

Hab. —?

The waved marking of this species appears to be invariably of an ash-purple colour. It is of an oblong-cylindrical form, and very distinctly characterized.

Species 43. (Mus. Cuming.)

OLIVA INDUSICA. *Oliv. testā ovalā, tenniculā, medio gibbo-inflatā, spirā brevi, columellā medio depresso-concavā, plicis planulatis, aperturā subpatulā; albā, punctis fuscescentibus, promiscuè undulatis, aspersā, margine suturali strigis fuscis irregularibus ornato, basi zonā fuscescente cingulatā, columellā albā, aperturā fauce ferruginā.*

THE INDUS OLIVE. Shell ovate, rather thin, gibbously inflated in the middle, spire short, columella depressively concave in the middle, plaits somewhat flattened, aperture rather wide open; white, sprinkled with light brown dots, promiscuously waved, sutural margin ornamented with irregular brown streaks, base encircled with a light brown zone, columella white, interior of the aperture rust-brown.

Hab. Kurrachee, mouth of the Indus.

An interesting new species, allied to *O. hiatula* and *testacea*. The surface of the shell is freckled throughout with faint brown dots disposed in promiscuous waves, and the sutural edge of the whorls is conspicuously streaked.

Species 44. (Mus. Cuming.)

OLIVA DUCLOSI. *Oliv. testā subconico-ovalā, crassā, superne tumidā, spirā exsertā, plicis columellaribus subamplis; aurantio-luteā, olivaceo-fusco dense reticulatā, areis reticulæ subdistantibus, acutè trigonis, columellā et aperturæ fauce aurantio-luteis.*

DUCLOS' OLIVE. Shell somewhat conically ovate, thick, swollen round the upper part, spire exserted, columellar plaits rather large; orange-yellow, thickly reticulated with olive-brown, the spaces of the network being rather distant and sharply triangular, columella and interior of the aperture orange-yellow.

Oliva jaspidea, Duclos, Mon. Oliv. pl. 8. f. 9, 10.

Hab. Banguay, Island of Luzon, Philippines (on the sands at low water); and Society Islands (in coral sand at low water); Cuming.

The net-work colouring of this species is so thickly developed as only to leave scattered sharply triangular spaces. Sometimes, however, it is much confused.

Having to apply the term *jaspidea* to Lamarek's *O. conoidalis*, in consequence of it being so named by Gmelin

under the head of *Voluta*, I have the pleasure to dedicate this species to M. Duclos, in acknowledgment of the value of his *Oliva* figures, of which it is much to be regretted he never published any descriptions.

Species 45. (Fig. *a, b*, Mus. Steere.)

OLIVA LENTIGINOSA. *Oliv. testā oblongā, subcylindraceā, crassā, spirā exsertā, plicis columellaribus subamplis, brevibus; lutescente-albā, purpureo-cinereo lentiginosā, maculis promiscuis nigricantibus infra suturas et in medio cingulatā, columellā et aperturæ fauce lutescente-albis.*

THE FRECKLED OLIVE. Shell oblong, somewhat cylindrical, thick, spire exserted, columellar plaits rather large, short; yellowish-white, freckled with light purple-ash, encircled beneath the sutures and round the middle with promiscuous blackish spots, columella and interior of the aperture yellowish-white.

Hab. — ?

An interesting new species, of which Miss Steere possesses the two characteristic specimens here figured.



46



47. b



49



50.



51.



52. a.



52. b.



53.

OLIVA.

PLATE XX.

Species 46. (Mus. Cuming.)

OLIVA GRACILIS. *Oliv. testā gracili-fusiformi, basi truncatā. Terebelliformi, spirā elongato-exsertā, anfractu ultimo brevi, aperturam versus descendente, columellā arcuatā, supernè callosā, plicis subcontortis; albā, rufescente-fusco sparsim et irregulariter reticulatā, zonā spadiceo-fuscā ad basin cingulatā, spirā callosā, parum pictā, columellā et aperturæ fauce albis.*

THE SLENDER OLIVE. Shell slenderly fusiform, truncated at the base, Terebellum-shaped, spire elongately exserted, last whorl short, descending towards the aperture, columella curved, callous at the upper part, plaits somewhat twisted; white, sparingly and irregularly reticulated with red-brown, encircled with a fawn-brown zone round the base, spire callous, but little painted, columella and interior of the aperture white.

BRODERIP and SOWERBY, Zool. Journal, vol. iv. p. 379.

Hab. Nipixapi, West Columbia (in sandy mud at a depth of about nine fathoms); Cuming.

Remarkable for the descending convolution of the last whorl, which gives a prolonged appearance to the spire, whilst the shell, being light and broadly truncated at the base, partakes of the form of *Terebellum*. The net-work colouring is extremely partial in its distribution.

Species 47. (Fig. a, b, Mus. Cuming.)

OLIVA CINCTA. *Oliv. testā ovalā, tenuiculā, inflatā, basin versus effusā, spirā brevi, columellā medio depressā, plicis calloso-contortis, aperturā subpatulā; olivaceo-cinereā, fusco undique obscurè minutè punctatā, strigis brevibus perpaucis infra suturas, fasciā angustā saturatiore in medio cingulatā, columellā albidā, fusco zonatā, aperturæ fauce fuscā.*

THE GIRDLED OLIVE. Shell ovate, rather thin, inflated, effused towards the base, spire short, columella depressed in the middle, plaits callously distorted, mouth rather wide open; olive-ash, obscurely minutely dotted throughout with brown, with a few short brown streaks beneath the sutures, and encircled with a narrow darker band round the middle, columella whitish, zoned with brown, interior of the aperture brown.

Hab. — 2

There is a strong apparent resemblance between this species and *O. Indusica*, but they differ materially on comparison.

Species 48. (Mus. Cuming.)

OLIVA BIPPLICATA. *Oliv. testā abbreviato-ovalā, crassā, obesā, longitudinaliter substriatā, spirā brevi, columellā arcuatā, lævi, supernè callosā, ad basin biphlicatā, aperturā basi effusā; carulescente-griseā, suturis fuscis, columellā basique intus violaceis, aperturā carulescente-griseā, margine violacē.*

THE TWO-PLAITED OLIVE. Shell abbreviately ovate, thick, stout, slightly striated longitudinally, spire short, columella arched, smooth, callous at the upper part, two-plaited at the base, aperture effused at the base; bluish-grey, sutures brown, columella and base deep violet, aperture blue-grey, violet at the edge.

SOWERBY, Tankerville, Cat. App. p. 33.

Hab. Monterey, California (in the sands at low water); Hinds.

Well distinguished by its short obese growth, and two basal columellar plaits.

Species 49. (Mus. Cuming.)

OLIVA KALEONTINA. *Oliv. testā oblongo-cylindricā, spirā exsertā, plicis columellaribus parvisculis; purpurascente-spadiceā, rufo-castaneo interruptè maculatā et variegatā, maculis oblongo-quadratis infra suturas, columellā et aperturæ fauce purpurascente-albis.*

THE WOVEN OLIVE. Shell oblong-cylindrical, spire exserted, columellar plaits rather small; purple-fawn, interruptedly spotted and variegated with reddish-chestnut, with oblong-square spots beneath the sutures, columella and interior of the aperture purplish-white.

DUCLOS, Mon. Oliv. pl. 8. f. 7, 8.

Hab. Bay of Guayaquil and Gallapagos Islands (at a depth of from six to twelve fathoms); Cuming.

There is a peculiarity in the form and colouring of this species which appears constant, and renders it easy to be recognized.

Species 50. (Mus. Cuming.)

OLIVA RUFULA. *Oliv. testā oblongā, spirā brevi, depressā, anfractu ultimo ad extremitatem posticam aperturæ callosoproducto, plicis columellaribus subevanidis; fusciscentis-spadiceā, rufo-castaneo oblique fasciatā, lineis obscure diagonaliter decussatā, columellā et aperturæ faucē subspadiceis.*

THE REDDISH OLIVE. Shell oblong, spire short, depressed, last whorl callously produced at the posterior end of the aperture, columellar plaits rather faint; brownish-fawn, obliquely banded with reddish-chestnut, and obscurely diagonally crossed with lines of the same colour, columella and interior of the aperture somewhat fawn-tinted.

DECIOS, Mon. Oliv. pl. 19. f. 9, 10.

Hab. Cagayan, Island of Mindanao, Philippines (in sandy mud at a depth of twenty fathoms); Cuming.

The form of this species is similar to that of *O. maura*; but the cross-barred style of colouring is characteristic and appears constant.

Species 51. (Mus. Cuming.)

OLIVA CONTORTUPLICATA. *Oliv. testā ovatā, tenuiculā, medio gibbosā, subinflatā, spirā brevi, acuminatā, callosā, apice acutā, columellā valdē arcuatā, plicis peculiariter fortiter contortis; cærulescente-griseā, zonā angustā castaneā basi cingulatā, columellā albā, aperturæ faucē intensē castaneā.*

THE TWISTED-PLAITED OLIVE. Shell ovate, rather thin, gibbous and slightly inflated in the middle, spire short, acuminate, callous, sharp at the apex, columella much arched, plaits peculiarly strongly twisted; blue-grey, encircled round the base with a narrow chestnut zone, columella white, interior of the aperture very dark chestnut.

Hab. Senegal, West Africa.

Very remarkably distinguished by a peculiar twisted growth of the plaited portion of the columella, above and around which is a depressed groove, coloured by the same dark chestnut as the interior of the shell.

Species 52. (Mus. Cuming.)

OLIVA MULTIPLICATA. *Oliv. testā oblongo-cylindricā, subangustā, spirā acuminatā, plicis columellaribus subtilibus, numerosissimis, aperturā angustā; albā, fusco-rubente undique minutissimē et eximie reticulatā, maculis perpaucis punctisque medio promiscuē cingulatā, linearum maculis infra suturas.*

THE MANY-PLAITED OLIVE. Shell oblong-cylindrical, rather narrow, spire acuminate, columellar plaits fine and very numerous, aperture narrow; whitish, very minutely and delicately reticulated throughout with brown-red, promiscuously encircled round the middle with a few blotches and dots, with blotches of lines beneath the sutures.

Hab. — ?

This species is also remarkably distinct, having the columellar plaits much finer and more numerous than in any hitherto known. The pattern consists of a delicate net-work of most elaborate fabric, very similar to that of the *Conus gloria-maris*.

Species 53. (Mus. Cuming.)

OLIVA TESSELLATA. *Oliv. testā ovatā, crassā, spirā brevi, apice acutā, plicis columellaribus latiusculis; luteā, purpureo-nigricante sparsim maculatā, columellā et aperturæ faucē intensē purpureo-violaceā.*

THE TESSELLATED OLIVE. Shell ovate, thick, spire short, sharp at the apex, columellar plaits rather broad, yellow, sparingly spotted with purple-black, columella and interior of the aperture intense, purple-violet.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 620.

Cylindrus tigrinus, Meuschen.

Voluta tigrina, Schröter.

Hab. Island of Ticao, Philippines; Cuming.

This well-known species stands alone in the genus, there being no other allied to it in respect of its characteristic style of painting.

2



56. a



55. b



52. b.



57. c.

OLIVA.

PLATE XXI.

Species 54. (Fig. *a, b*, Mus. Steere; Fig. *c*, Mus. Cuming.)

OLIVA VOLUTELLA. *Oliv. testâ oblongo-cylindraccâ, spirâ exertâ, apice acutâ, plicis columellaribus numerosis, omnibus basalibus; cœruleo-griseâ aut fusco-purpureâ, immaculatâ, suturis et zonâ basali castaneo-fuscis, zonâ interdum autem rarò pallidè luteâ, columellâ albidâ, apertura fauce intensè castaneâ.*

THE LITTLE VOLUTE OLIVE. Shell oblong-cylindrical, spire exerted, sharp at the apex, columellar plaits numerous, all basal; blue-grey or brown-purple, unspotted, sutures and basal zone chestnut-brown, sometimes, but rarely, pale yellow, columella whitish, interior of the aperture very dark chestnut.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 623.

Olivæ carulea, Wood.

Hab. Panama (on mud banks at low water); Cuming.

The whole of the columellar plaits of this species are upon the callous basal zone. The shell varies in colour from a blue-green to a very dark chestnut-purple.

Species 55. (Fig. *a, b*, Mus. Metcalfe.)

OLIVA ANCILLARIOIDES. *Oliv. testâ oblongâ, crassâ, spirâ exertâ, acuminatâ, plicis columellaribus callosocostatis; sordidè carneolâ, immaculatâ, nisi infra suturas cranidè strigatâ, zonâ basali pallidiore, columellâ et apertura fauce albidis.*

THE ANCILLARIA-LIKE OLIVE. Shell oblong, thick, spire exerted, acuminate, columellar plaits callously twisted; dull carnation, unspotted save beneath the sutures, where it is faintly streaked, basal zone paler, columella and interior of the aperture whitish.

Hab. Kurrachee, Mouth of the Indus.

The colour and general aspect of this species is very similar to that which prevails among the *Ancillariae*. The only specimen known to me, in addition to the one here

figured from Mr. Metcalfe's collection, belongs to Mr. Cuming, with the above-named locality attached to it.

Species 56. (Fig. *a, b*, Mus. Cuming.)

OLIVA FAXILLUS. *Oliv. testâ oblongo-conicâ, crassâ, obesâ, subfusiformi, spirâ ampliter exertâ, plicis columellaribus paucis; eburneâ, fuscescente obscure notatâ, maculis reticulatis castaneis aspersis infra suturas.*

THE PEG OLIVE. Shell oblong-conical, thick, stout, rather fusiform, spire largely exerted, columellar plaits few in number; ivory-white, obscurely marked with light brown, with scattered spots of chestnut network beneath the sutures.

Hab. — ?

The form and painting of this species both remind one of certain varieties of *Conus reticulatus*.

Species 57. (Fig. *a, b, c*, Mus. Steere.)

OLIVA LIGNEOLA. *Oliv. testâ oratâ, suprâ tumidiusculâ, spirâ brevi, subulatâ, plicis columellaribus numerosis, subcanidix; fulvâ aut nigricante-castaneâ, immaculatâ, zonâ basali pallidiore nigricante-castaneo tinctâ, columellâ albâ, interdum purpurascente tinctâ, apertura fauce cœrulescente-albâ.*

THE WOODEN OLIVE. Shell ovate, rather swollen round the upper part, spire short, rather sharp, columellar plaits numerous, rather faint; fulvous or blackish-brown, unspotted, basal zone paler, stained with blackish chestnut, interior of the aperture bluish-white.

Hab. — ?

The specimens here figured from Miss Steere's collection appear to represent a species distinct from any described hitherto, one of a fulvous-brown colour, the other a very dark brilliant chestnut, of which colour both have a characteristic stain at the base.



58 b



59 a



59



60 a



60 b



60 c



60 d



60 e



60 f

OLIVA.

PLATE XXII.

Species 58. (Fig. *a*, Mus. Steere; Fig. *b*, *c*, Mus. Cuming.)

OLIVA JASPEDEA. *Olio. testâ acuminato-oblongâ, subfusiformi, spirâ exsertâ, columellâ multiplicatâ; albidâ, fusca profuse minutè punctatâ, maculis reticulatis infra suturas et ad zonam basalem, interdum cinereo antæ ceruleo nebulatâ et albipunctatâ.*

THE JASPER OLIVE. Shell acuminate oblong, somewhat fusiform, spire exerted, columella finely plaited; whitish, profusely minutely dotted with brown, with blotches of net-work beneath the sutures and on the basal zone, sometimes clouded with ash or blue and dotted with white.

Volula jaspidea, Gmelin, Syst. Nat. p. 3442.

Oliva conoidalis, Lamarck.

Hab. West Indies. Red Sea.

This pretty species is well characterized by the blotches of net-work beneath the sutures, and by a pattern of similar design on the basal zone, whilst the intermediate space is curiously wave-dotted. The specimens represented at Fig. 58 *a* and 58 *c* are from the West Indies, whilst the blue-clouded variety at 58 *b* is from the Red Sea.

Species 59. (Mus. Steere.)

OLIVA VOLVARIOIDES. *~ Olio. testâ oblongo-ovalâ, spirâ brevi, acutâ, columellâ multiplicatâ, plicis brevibus, subprominentibus; undique vividè castaneâ, columellâ et apertura fauce cærulescente-albis.*

THE VOLVARIA-LIKE OLIVE. Shell oblong-ovate, spire short, sharp, columella many-plaited, plaits short, rather prominent; bright chestnut throughout, columella and interior of the aperture bluish-white.

DUCLOS, Mon. Oliv. pl. 25. f. 14.

Hab. — ?

The uniform chestnut colouring appears to be peculiar to the species in this instance.

Species 60. (Fig. *a*, *b*, *c*, *f*, Mus. Cuming; Fig. *d*, *e*, Mus. Steere.)

OLIVA CARNEOLA. *Olio. testâ oblongo-cylindricâ, spirâ brevi, columellâ multiplicatâ, plicis brevibus; obusâ, purpurascente densè reticulatâ, anfractûs ultimi marginè postico punctato, deinde testâ crassâ, medio tumidâ, plicis subevanidis, aurantio-carneolo vividè fasciatâ.*

THE CARNELION OLIVE. Shell oblong-cylindrical, spire short, columella many-plaited, plaits short; ivory-white, thickly reticulated with light purple, posterior edge of the last whorl dotted, then shell thickened, swollen round the middle, columellar plaits somewhat faint, banded with bright orange-carnelion.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 621.

Varietates. ▲

Oliva todosina and *Athenia*, Duclos.

Hab. Philippine Islands (at depths varying from ten to sixty fathoms); Cuming.

This species varies from the oblong-cylindrical purple-netted state represented at Fig. 60 *a*, *b*, to the stout rich orange-carnelion banded state at Fig. 60 *e*, the latter being probably an overcoating of the former. In the specimen figured at 60 *d*, *c*, a mixture of these patterns and colours is represented, in which the purple net-work of the former state is seen beneath a layer of the carnelion enamel of the latter.



63. b.



64.



64. b.



65. b.



OLIVA.

PLATE XXIII.

Species 61. (Fig. *a, b*, Mus. Steere.)

OLIVA SEMISTRIATA. *Oliv. testā acuminato-ovatā, spirā exertā, basi latē effusā, truncatā, anfractibus ultimi dimidio postico concentricē inciso-striato, striis creberrimis, interdum obsolete, columellā arcuatā, depressā, basi obsolete uniplicatā; griseo-plumbeā, zonā luteolā angustā cingulatā, spirā callosā, albidā, suturis castaneo-brunneis, columellā basi que albis, aperturæ fauce intensē castaneo-brunneā.*

THE HALF-STRIATED OLIVE. Shell acuminate ovate, spire exerted, base broadly effused, truncated, posterior half of the last whorl concentrically deeply striated, striae close-set, sometimes obsolete, columella arched, depressed, obsoletely one-plaited at the base; greyish lead-colour, encircled with a narrow yellowish zone, spire callous, whitish, sutures chestnut-brown, base and columella white, interior of the aperture dark chestnut-brown.

GRAY, Zool. Beechey's Voyage, p. 130. pl. 36. f. 10.

Hab. Salango, West Columbia; Cuming.

This species is well characterized by the upper or posterior portion of the last whorl being very closely concentrically grooved with striae, which in the preceding whorls become obliterated by the flow of enamel from the aperture.

The locality of *O. semistriata* is not given in Beechey's Voyage. The species was observed at Salango, by Mr. Cuming, moving about by hundreds with great rapidity in the wet sand.

Species 62. (Mus. Steere.)

OLIVA COLUMELLARIS. *Oliv. testā acuminato-ovatā, depressā, spirā breviusculā, acutā, basi latē effusā, truncatā, columellā usque ad spiram crassē callosā, basi obsolete uniplicatā; cærulescente-plumbeā, luteo-albido bizonatā, columellā albā, aperturæ fauce intensē castaneo-brunneā.*

THE COLUMELLAR OLIVE. Shell acuminate ovate, depressed, spire rather short, sharp, base broadly effused, truncated, columella thickly callous all along to the spire, obsoletely one-plaited at the base; bluish lead-colour, two-zoned with yellowish-white, columella white, interior of the aperture dark chestnut-brown.

SOWERBY, Tankerville Catalogue, App. p. 35.

Hab. Payta, Peru (in fine sand at low water); Cuming.

Remarkably distinguished by a very copious deposit of enamel along the columella on to the spire.

Species 63. (Fig. *a, b*, Mus. Steere.)

OLIVA LINEOLATA. *Oliv. testā acuminato-oblongā, crassā, spirā valdē exertā, callosā, columellā arcuatā, basi subobscurē multiplicatā et contortā; spadiceo-albā, lineolis fuscis infra suturas strigatā et reticulatā, basi immaculatā, columellā et aperturæ fauce intensē violaceo-purpureis.*

THE LINE-NETTED OLIVE. Shell acuminate oblong, thick, spire much exerted, callous, columella arched, somewhat obscurely many-plaited and twisted at the base; fawn-white, streaked and reticulated beneath the sutures with brown lines, base unspotted, columella and interior of the aperture deep violet-purple.

GRAY, Wood's Index Testaceologicus, Supp. pl. 5. f. 37.

Oliva dama, DuRoi.

Hab. California.

The net-work of this species descends in rather long lines from the sutures. The columella and interior of the shell are well distinguished by their rich violet-purple colouring.

Species 64. (Fig. *a*, Mus. Steere; Fig. *b*,

Mus. Cuming.)

OLIVA NIVEA. *Oliv. testā acuminato-oblongā, crassā, spirā valdē exertā, callosā, columellā obscurē multiplicatā, superne callosā; Intescente-albā, infra suturas roseo-purpureo eximie promiscuē reticulatā, fasciā reticulatā medio pallidiore, basi immaculatā, columellā et aperturæ fauce albis.*

THE SNOWY OLIVE. Shell acuminate oblong, thick, spire much exerted, callous, columella obscurely many-plaited, callous at the upper part; yellowish-white, delicately promiscuously reticulated beneath the sutures with rose-purple, the reticulated band being paler in the middle, base unspotted, columella and interior of the aperture white.

Voluta nivea, Gmelin, Syst. Nat. p. 3442.

Oliva eburnea, Lamarck.

Hab. West Indies.

Encircled with a broad band of delicately painted rose-purple net-work upon a semitransparent yellowish-white ground, the columella and interior of the aperture being free from any tinge of colour.

Species 65. (Fig. a, b, Mus. Steerc.)

OLIVA ESTHER. *Oliv. testā ovatā, crassā, obesā, spirā breviusculā, columellā arcuatā, obscurè multiplicatā, superne callosā; albā, lineis plurimis fuscescentibus irregulariter undatā, vix reticulatā, fasciā castaneā angustā ad basin, columellā et aperturæ fauce albis.*

THE ESTHER OLIVE. Shell ovate, thick, stout, spire rather short, columella arched, obscurely many-plaited, callous at the upper part; white, irregularly waved, scarcely reticulated, with numerous pale brown lines, with a narrow chestnut band at the base, columella and interior of the aperture white.

DUCLOS, Mon. Oliv. pl. 3. f. 7, 8.

Hab. —?

A shell of short stout growth, in which the painting has the character of an unravelled net-work.

Species 66. (Mus. Cuming.)

OLIVA NANA. *Oliv. testā subtrigono-ovatā, superne tumidā, callosā, spirā brevi, columellā valdè callosā, præcipue versus spiram, basi obscurè uni-bi-plicatā; albidā aut spadiceo-lutescente, medio lineis castaneis acutè angulatis concentricè undatā.*

THE DWARF OLIVE. Shell somewhat triangularly ovate, swollen and callous round the upper part, spire short, columella very callous towards the spire, base obscurely one-two-plaited; whitish or light fawn-yellow, concentrically waved round the middle with zigzag chestnut lines.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 631.

Voluta micans, Dillwyn.

Hab. West Indies.

This little species is well characterized by its swollen callous growth round the upper or posterior edge of the whorls, and by its concentric zigzag style of painting.



69. d



69. b



70. b.



70. c

OLIVA.

PLATE XXIV.

Species 67. (Fig. *a*, Mus. Steere; Fig. *b*,
Mus. Cuming.)

OLIVA LEUCOZONIAS. *Oliv. testā acuminato-oblongā, spirā acutē exsertā, columellā multiplicatā, plicis subtilibus, confertis; aurantio-luteā, zonis angustis distantibus albis cingulatā, nigro promiscuē lentiginosā et punctatā, columellā et aperturæ foveæ albīs.*

THE WHITE-ZONED OLIVE. Shell acuminate oblong, spire sharply exserted, columella many-plaited, plaits fine, close-set; orange-yellow, encircled with two distant narrow white zones, and promiscuously freckled and dotted with black, columella and interior of the aperture white.

GRAY, Zool. Beechey's Voyage, p. 130. pl. 36. f. 24.

Hab. Senegal.

Distinguished by a very peculiar style of painting, which consists of a uniform orange-yellow irregularly freckled and spotted with black, and encircled by two narrow white bands, one next the sutures, over which the black appears in larger freckles, and one a little above the anterior or basal zone.

Species 68. (Mus. Steere.)

OLIVA HIEROGLYPHICA. *Oliv. testā oblongā, superne tumidiusculā, spirā subacuminatā, plicis columellaribus numerosis, distinctis; eburnā, nitente, maculis hieroglyphicis fusciscentibus trieriatim cingulatā.*

THE HIEROGLYPHIC OLIVE. Shell oblong, rather swollen round the upper part, spire slightly acuminated, columellar plaits numerous, distinct; ivory-white, shining, encircled by three rows of pale brown hieroglyphic marks.

Hab. — ?

Amplly distinguished by its peculiarities of form and marking.

Species 69. (Fig. *a, b, c, d*, Mus. Cuming.)

OLIVA ZENOPIRA. *Oliv. testā ovali, crassā, plus minus obesa, spirā brevi, columellā obsolete tenuiplicatā, superne ralde callosā; eburnā, lineis subtilibus undatis*

medio bifasciatim cingulatā, interdum griseo-fuscescente, maculis parvis aut strigis nigricantibus, ceruleo-umbratis, promiscuē uolutā, zonā pallidē castaneā ad basin, columellā albā, maculā ampli castaneā interdum lineatā.

THE VARIABLE OLIVE. Shell ovate, thick, more or less stout, spire short, columella obsoletely finely plaited, very callous at the upper part; ivory-white, encircled round the middle with two bands of five zigzag lines, sometimes greyish-brown, promiscuously marked with blue-shaded blackish streaks or small spots, with a pale chestnut zone at the base, columella white, sometimes stained with a large chestnut blotch.

DUCLOS, Mon. Oliv. pl. 3. f. 11, 12.

Hab. Madagascar.

The colouring of this species is so exceedingly variable, that it requires a collection of many specimens to understand the relation that subsists between the extreme conditions of it, represented in the accompanying plate.

Species 70. (Fig. *a, b*, Mus. Cuming; Fig. *c*,
Mus. Metcalfe.)

OLIVA CÆRULEA. *Oliv. testā acuminato-oblongā, spirā exsertā, columellā arcuatā, basi contortā, plicis obsolete; albidā, ceruleo vicidē lineatā, interdum fusco subtilissimē punctatā, suturis basi que plus minus intense castaneis, apice nigricante, columellā et aperturæ foveæ plerumque castaneo lineatā.*

THE BLUE OLIVE. Shell acuminate oblong, spire exserted, columella arched, twisted at the base, plaits obsolete; whitish, brightly stained with blue, sometimes very finely dotted with brown, base and sutures more or less deeply stained with chestnut, apex blackish, columella and interior of the aperture generally stained with chestnut.

Hab. Carthagena, Central America?

An interesting small species, of mostly a bright blue porcelain character, sometimes, but rarely, finely dotted with brown, and encircled at the base with very dark chestnut.





71.



72. b



73. a



74. b.



73. b.



73. d.



73. e.

OLIVA.

PLATE XXV.

Species 71. (Mus. Steere.)

OLIVA DEALBATA. *Oliv. testâ acuminato-oblongâ, subangustâ, spirâ exsertâ, apice acutâ, columellâ leviter arcuatâ, plicis obliquis, distantibus, ferè evanidis; eburneâ, plicis fuscis sagittariis infra suturas notatâ, basi fusco sparsim linctâ.*

THE BLEACHED OLIVE. Shell acuminate oblong, rather narrow, spire exserted, sharp at the apex, columella slightly curved, plaits oblique, distant, almost faded; ivory-white, marked beneath the suture with arrow-headed brown dots, base sparingly stained with brown.

Hab. --- ?

This species appears to be distinct in respect of form, and may prove to be uniformly as colourless as the specimen here figured.

Species 72. (Fig. a, Mus. Cuming; Fig. b, Mus. Steere.)

OLIVA STRIGATA. *Oliv. testâ ovatâ, tumidiusculâ, Eburniformi, spirâ exsertâ, columellâ callosâ, basi unipli- catâ; sordidè spadicâ, strigis fusciscentibus undatis longitudinaliter pictâ, columellâ albâ, aperturæ fance fusciscenti.*

THE STREAKED OLIVE. Shell ovate, rather swollen, Eburna-shaped, spire exserted, columella callous, one-plaited at the base; dull fawn-colour, painted longitudinally with light brown streaks, columella white, interior of the aperture light brown.

Hab. West Indies.

Distinguished by its Eburna-like form, and characteristic striped painting.

Species 73. (Fig. a, Mus. Cuming; Fig. b, c, d, e, Mus. Steere.)

OLIVA UNDATELLA. *Oliv. testâ cylindracco-ovatâ, spirâ breviusculâ, apice acuminatâ, columellâ basi quadripli- catâ, plicis planulatis, suprâ multiplicatâ, plicis rotan- datis, subdistantibus; albâ, cæruleo-griseo et fusco variè undatâ et nebulatâ, arcis trigonis albidis promi- nentibus, interdum omnino cæruleo-nigricante, zonâ basali intescente, lineis fuscis strigatâ, columellâ albidâ, plicis basilibus sæpissimè intense purpureo linctis.*

THE WAVED OLIVE. Shell cylindrically ovate, spire rather short, acuminate, columella four-plaited at the base, plaits flattened, many-plaited above, plaits rounded and rather distant; whitish, variously waved and clouded with blue-grey and brown, with promiscuous whitish triangular spaces, basal zone yellowish, streaked with brown lines, columella whitish, basal plaits most frequently stained with deep purple.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 630. Varietates.

Olivæ undulina and *undona*, Duclou.

Hab. Bay of Panama (in sand and on mud banks at low water); Cuming.

It has been necessary to figure several examples of this species to show its variety of colouring, the pattern of which is sometimes disposed in promiscuous waves and sometimes in broad triangular dashes.

Species 74. (Fig. a, b, Mus. Steere.)

OLIVA ANAZORA. *Oliv. testâ acuminato-oblongâ, subinfla- tâ, spirâ exsertâ, columellâ supernè callosâ, infrâ ar- cuatâ, latè bicipitatâ, plicis deinde multiplicatis, plicis superioribus peculiariter interruptis, aperturâ basi sub- effusâ; cinerascen- albâ, lineis fuscis acutè longitudi- naliter undatâ, zonâ basali spadicæo-castaneâ, columellâ et aperturæ fance purpurascen- albâ.*

THE BELTED OLIVE. Shell acuminate oblong, rather inflated, spire exserted, columella callous at the upper part, arched beneath and broadly two-plaited, the plaits being divided into numerous other small plaits, of which the upper are peculiarly interrupted, aperture somewhat effused at the base; ash-white, sharply longitudinally waved with brown lines, basal zone fawn-chestnut, columella and interior of the aperture purplish-white.

DUCLOU, Mon. Oliv. pl. 5. f. 3, 4.

Hab. Xipixapi, West Columbia (in sandy mud at the depth of ten fathoms); Cuming.

This very pretty species is constantly distinguished by its delicate wave-streaked painting and dark-brown basal zone. The plaiting of the columella, as above described, is also peculiar.





76. b.



78. b.



79.



80. b.



80. c.

OLIVA.

PLATE XXVI.

Species 75. (Mus. Steere.)

OLIVA PYGMAEA. *Oliv. testâ cylindræco-oblongâ, spirâ brevi, apice acutâ, columellâ lævigatâ, nisi ad basin plicatâ, plicis angustis, interstitiis subprofundis; aurantio-luteâ, rufo-fusco variè nebulatâ et punctatâ, columellâ et apertura sauce albâ.*

THE PYGMY OLIVE. Shell cylindrically oblong, spire short, sharp at the apex, columella smooth, except that it is plaited at the base, the plaits being small and the interstices between them rather deep; orange-yellow, clouded and dotted with red-brown, columella and interior of the aperture white.

Hab. — ?

This is, perhaps, nearest allied to *O. ispidula*, but differs sufficiently from any of the varieties of that species.

Species 76. (Mus. Cuming.)

OLIVA ZANOETA. *Oliv. testâ acuminato-oblongâ, tenuiculâ, basi subeffusâ et truncatâ, spirâ exsertâ, columellâ basin versus plicatâ, plicis parvisculis; albâ, purpurascens-fusco latè bifusciatâ, subpellucidâ, quasi cornedâ, zonâ angustâ lateolâ apicâ prope ad basin.*

THE HORNY OLIVE. Shell acuminate oblong, rather thin, somewhat effused and truncated at the base, columella plaited towards the base, plaits rather small; whitish, broadly two-banded with purple-brown, rather transparent, as if horny, with a narrow opaque yellowish band at the base.

Duclos, Mon. Oliv. pl. 2. f. 9, 10.

Hab. — ?

A very distinct species, remarkable for its shining horny appearance, whilst the dark purple-brown bands which encircle the shell are seen through in the interior.

Species 77. (Mus. Steere.)

OLIVA PANNICULATA. *Oliv. testâ oblongâ, supernè tumidâ, spirâ exsertâ, columellâ undique plicatâ; cornedâ, purpurascens-fusco pallidissimè undato-nebulatâ, maculis quadratis in mediâ et infra suturas notatâ.*

THE SILK-CLAD OLIVE. Shell oblong, rather swollen round the upper part, spire exserted, columella plaited throughout; ivory-white, very faintly wave-

clouded with purplish-brown, marked round the middle and beneath the sutures in square spots.

Duclos, Mon. Oliv. pl. 5. f. 15-18.

Hab. — ?

Very faintly marked, but well characterized by its form, and by the rows of square spots round the middle and beneath the sutures.

Species 78. (Fig. a, b, Mus. Cuming.)

OLIVA FULGIDA. *Oliv. testâ fusiiformis-oblongâ, tenuiculâ, subinflatâ, spirâ caldè exsertâ, basi subeffusâ et truncatâ, basi biplicatâ; albâ, aurantio-fusco pallidissimè undato-nebulatâ, lineis aut maculis parvis linearibus supra et infra marginatâ, zonâ basali callosâ, luctâ.*

THE GLITTERING OLIVE. Shell fusiformly oblong, rather thin and inflated, spire much exserted, base rather effused and truncated, columella arched, two-plaited at the base; white, very faintly wave-clouded with orange-brown, margined above and below with lines or small linear spots, basal zone callous, cream-coloured.

Hab. West Indies.

A delicately-coloured species, of which the basal zone is more than usually callous and of a clear cream-colour.

Species 79. (Mus. Cuming.)

OLIVA PICTA. *Oliv. testâ cylindræco-ovalâ, supernè tumidâ, spirâ brevissimâ, columellâ uncallosâ, undique plicatâ; fulvo-olivaceâ, fusco nebulatâ punctisque castaneis subtrigonis undique promiscuè pictâ, anfractuâ margine infra suturas castaneo punctato, columellâ cærulescente-albâ, apertura sauce olivaceo-fusâ.*

THE PAINTED OLIVE. Shell cylindrically ovate, swollen round the upper part, spire very short, columella rather callous, plaited throughout; fulvous orange, clouded with brown and everywhere promiscuously painted with subtriangular chestnut dots, edge of the whorls beneath the sutures dotted with chestnut, columella bluish-white, interior of the aperture olive-brown.

Hab. Philippine Islands; Cuming.

* A characteristic new species, distinguished by its shortened cylindrical form and triangularly dotted marking.

Species 80. (Fig. *a, b, c*, Mus. Steere.)

OLIVA TERGINA. *Oliv. testā oblongā, tumidiusculā, crassā, basi truncatā, spirā exsertā, callosā, columellā arcuatā, subexcavatā, supernè callosā, infrā obliquè plicatā; lutescente-albā aut lacteā, fusco vel cæruleo-fusco densè reticulatā, areis interdum interruptis, spirā et zonā basali immaculatis, columellā et aperturæ fauce cærulescente-albis.*

THE HIDE OLIVE. Shell oblong, rather swollen, thick, truncated at the base, spire exserted, callous, columella arched, slightly excavated, callous at the upper

part, plaited obliquely beneath; yellowish-white or cream-colour, thickly reticulated with brown or blue-brown, the spaces being sometimes interrupted, spire and basal zone unspotted, columella and interior of the aperture bluish-white.

DUCLOS, Mon. Oliv. pl. 2. f. 13-16.

Hab. Conchagua, Central America (on sand-banks). Cuming.

Distinguished mainly by its callous growth and dense splashy pattern of net-work.





82. a.



81. a.



83. a.

82. b.



84. a.



84. b.



85. a.



85. b.



81. b.

OLIVA.

PLATE XXVII.

Species 81. (Fig. *a, b*, Mus. Steere.)

OLIVA ORYZA. *Oliv. testâ acuminato-oblongâ, crassiusculâ, spirâ exsertâ, columellâ multiplicatâ; eburneâ, lineis fibriosis fusciscentibus interdum pallidissimè tinctâ, apice nunc cærulescente, nunc rufo-aurantio.*

THE RICE-GRAIN OLIVE. Shell acuminately oblong, rather thick, spire exserted, columella many-plaited; ivory-white, sometimes faintly marked with light brown flexuous lines, apex now bluish, now reddish-orange.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 631.
Hab. —?

The colouring of the apex seems to be a characteristic feature in this species.

Species 82. (Fig. *a, b*, Mus. Steere.)

OLIVA TRITICEA. *Oliv. testâ sulfusiformi, spirâ valdè exsertâ, columellâ basi obscurè uniplicatâ, callosa-confortâ; albidâ, rufo-fusco conspicuè tessellatâ et strigatâ.*

THE WHEAT-GRAIN OLIVE. Shell somewhat fusiform, spire much exserted, columella obscurely one-plaited at the base, callously twisted; whitish, conspicuously tessellated and streaked with red-brown.

DE CLOS, Mon. Oliv. pl. 1. f. 3, 4.
Hab. —?

Distinguished by its elongated form and blotchy tessellated painting.

Species 83. (Fig. *a, b*, Mus. Steere.)

OLIVA MODESTA. *Oliv. testâ cylindræo-oblongâ, apice acuminatâ, columellâ rectâ, multiplicatâ; albidâ, fusciscente latifasciatâ, maculis punctisque fuscis promiscuè subobscurè notatâ.*

THE MODEST OLIVE. Shell cylindrically oblong, acuminate at the apex, columella straight, many-plaited;

whitish, promiscuously rather obscurely blotched and dotted with brown.

Hab. —

The marking of this species bears some little resemblance to that of *O. kaleontina*.

Species 84. (Fig. *a, b*, Mus. Steere.)

OLIVA MONILIFERA. *Oliv. testâ subacuminato-oblongâ, spirâ exsertâ, columellâ subarcuatâ, basi multiplicatâ; albâ, rufo-fusciscente e suturis in strigis descendente, deinde densè variegatâ, anfractuâ margine supero nitidè castaneo punctatâ, basi castaneo fasciatâ.*

THE NECKLACE-MARKED OLIVE. Shell somewhat acuminately oblong, spire exserted, columella slightly arched, many-plaited at the base; white, with reddish-brown descending in streaks from the sutures, then thickly variegated, upper edge of the whorl marked with a neat row of chestnut dots, with a dark chestnut band at the base.

Hab. —?

A shell of rather solid growth, richly streaked and variegated with reddish-brown, whilst the upper edge of the whorls presents a characteristic necklace of chestnut dots.

Species 85. (Fig. *a, b*, Mus. Steere.)

OLIVA PELLUCIDA. *Oliv. testâ oblongo-ovatâ, tenui, subinflatâ, spirâ exsertâ, columellâ arcuatâ, basi obscurè uni-bi-plicatâ; pellucido-corneâ, lineis undulatis fuscis nitidè pictâ, columellâ basi opacâ, callosâ.*

THE TRANSPARENT OLIVE. Shell oblong-ovate, thin, slightly inflated, spire exserted, columella arched, obscurely one-two-plaited at the base; transparent horny, neatly painted with undulating brown lines—columella opaque and callous at the base.

Hab. —?

Very prettily painted with broadly waved red-brown lines upon a transparent ground.

•

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86. a.



88. b.



89. a.



92. c.



93. b. 94.

OLIVA.

PLATE XXVIII.

Species 86. (Fig. *a, b, c*, Mus. Steere.)

OLIVA MUTICA. Oliv. testā ovalā, subobesā, spirā breviusculā, acuminatā, callosā, columellā arcuatā, obscure plicatā, superne valdē callosā; cinerascēte-albā aut griseā, lineis nigricante-fuscis plus minus distincte undulatā, zonā castaneā angustā ad basin.

THE BEARLESS OLIVE. Shell ovate, rather stout, spire rather short, acuminate, callous, columella arched, obscurely plaited, very callous at the upper part; ash-white or greyish, more or less distinctly waved with black-brown lines, with a narrow chestnut zone at the base.

N.Y. Journ. Acad. Nat. Sci. Phil. vol. ii. p. 228.

Hab. West Indies. South Carolina. Red Sea.

An extremely variable species, with a wide range of habitation. The waved lines are sometimes narrow and close-set, sometimes broader and more distant, and often-times they are nearly obscured by a coating of blue-grey.

Species 87. (Fig. *a, b, c*, Mus. Cuming.)

OLIVA MILLEPUNCTATA. Oliv. testā abbreviato-ovalā, superne tumidā, spirā brevissimā, valdē callosā, columellā subarcuatā, basin versus obscure tenuiplicatā, superne valdē callosā; cinereo-fulvescente, undique minute fusco-punctatā, punctis majoribus infra suturas, columellā albā, maculā castaneā tinctā.

THE THOUSAND-DOTTED OLIVE. Shell shortly ovate, swollen round the upper part, spire very short, very callous, columella slightly arched, obscurely finely plaited towards the base, very callous at the upper part; ash-fulvous, minutely dotted throughout with brown, dots larger beneath the sutures, columella white, stained with a chestnut blotch.

Duclos, Mon. Oliv. pl. 25. f. 1, 2.

Hab. West Indies.

So closely related to *O. nana*, that the two species almost pass one into the other.

Species 88. (Fig. *a, b*, Mus. Cuming.)

OLIVA RUFIFASCIATA. Oliv. testā ovalā, obesā, solidiusculā, spirā brevi, acuminatā, columellā arcuatā, obscure tenuiplicatā, superne callosā; albidā, castaneo-rufo latifusciatā.

THE RED-BANDED OLIVE. Shell ovate, stout, rather solid, spire short, acuminate, columella arched, obscurely finely plaited, callous at the upper part: whitish, broadly banded with chestnut-red.

Hab. — ?

This shell agrees very nearly with one figured by M. Duclos as a variety of *O. mutica*, but it differs from that species in form as well as in its plan of colouring.

Species 89. (Fig. *a, b*, Mus. Steere.)

OLIVA GUILDINGII. Oliv. testā acuminato-oblongā, spirā exsertā, columellā arcuatā, tenuiplicatā; griseo-carnescente, eximie fusco strigatā et punctatā, anfractuuum margine superno lutescente, strigis e suturis descendētibz, apice nigricante.

GUILDING'S OLIVE. Shell acuminately oblong, spire exserted, columella arched, finely plaited; grey-blue, faintly streaked and dotted with brown, upper edge of the whorls yellowish, with the streaks descending from the sutures, apex blackish.

Hab. Island of St. Vincent's. West Indies.

I dedicate this pretty species to the memory of the Rev. Lansdowne Guilding, by whom it was collected, and to whom we are indebted for so many interesting shells from the same locality.



90. a.



91.



92. "



92. d.



93. a.



93. b.



90. b.

OLIVA.

PLATE XXIX.

Species 90. (Fig. *a, b*, Mus. Steere.)

OLIVA ATTENUATA. *Oliv. testā ovalā, basin versus latiusculā, apicem versus peculiariter acuminatā, columellā subarcuatā, vix plicatā, supernè callosā; pellucido-corneā, fusco-rufo latè bifasciatā.*

THE ATTENUATED OLIVE. Shell ovate, rather broad towards the base, peculiarly acuminate towards the apex, columella slightly arched, scarcely plaited, callous at the upper part; transparent-horny, broadly banded with brown-red.

Hab. — ?

This species might readily be confounded with the following from the similarity of its texture and painting, but from a comparison of numerous specimens of each I feel assured of their being distinct. The *O. attenuata* is uniformly more attenuated towards the apex and broader at the base, whilst the sutures of the spire are less deeply excavated, and the brown-red bands broader and lower on the shell.

Species 91. (Fig. *a, b*, Mus. Steere.)

OLIVA ZONALIS. *Oliv. testā ovalā, supra medium tumidiusculā, spirā subacuminatā, columellā arcuatā, basi subobscurè uniplicatā; semipellucido-corneā, fusco-rufo trifasciatā, maculā castaneā supra columellam.*

THE ZONED OLIVE. Shell ovate, rather swollen above the middle, spire slightly acuminate, columella arched, somewhat obscurely one-plaited at the base; semitransparent horny, three-banded with brown-red, with a chestnut blotch at the upper part of the columella.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 631.

Hab. Near Acapulco, Mexico; Humboldt and Bonpland.

The comparative difference in the forms of this and the preceding species is well shown by Mr. Sowerby in the accompanying figures, especially in Fig. 90 *b* and 91 *a*. The conformation of the columella varies slightly, the bands are narrower and three in number, and there is a characteristic dark blotch on the body-whorl above the columella.

Species 92. (Fig. *a, b, c*, Mus. Cuming; Fig. *d*, Mus. Steere.)

OLIVA FIMBRIATA. *Oliv. testā ovalā, supernè tumidiusculā, spirā subacuminatā, columellā arcuatā, vix plicatā, plicis callosis; luteo-fusca, longitudinaliter obscure subtilissimè strigatā, fasciā pallidā, reticulo maculatā, infra suturas.*

THE FRINGE-BORDERED OLIVE. Shell ovate, rather swollen round the upper part, spire somewhat exserted, columella arched, scarcely plaited, plaits callous; yellowish-brown, longitudinally obscurely very finely streaked, encircled beneath the sutures with a pale band, blotched with net-work.

Hab. West Indies.

This little species, which is liable to be confounded with *O. mutica*, has a very characteristic border of fringe-painting round the upper part of the whorls, where it has a brighter enamelled aspect and is more swollen.

Fig. 93 *a, b*. (Mus. Metcalfe.)

This little shell proves on further examination to be a delicate discoloured specimen of the zigzag variety of *O. mutica*, represented in Pl. XXVIII. Fig. 86 *b, c*.



87. a.



88. a.



89. a.



90. a.



91. a.



92. a.



93. a.



94. a.

OLIVA.

PLATE XXX.

Species 94. (Mus. Cuming.)

OLIVA MYRIADINA. *Oliv. testā subfusiformi-oblongā, spirā exsertā, columellā brevi, arcuatā, basi obscure uniplicatā; eburneā, nitente, semipellucidā.*

THE MYRIAD OLIVE. Shell somewhat fusiformly oblong, spire exserted, columella short, arched, obscurely one-plaited at the base; ivory-white, shining, semipellucid.

DUCLOS, Mon. Oliv. pl. 5. f. 1, 2.

Hab. —?

There is no indication of colour or marking in this species, which is of a pure pellucid-white.

Species 95. (Fig. a, b, Mus. Cuming.)

OLIVA LANCEOLATA. *Oliv. testā fusiformi-oblongā, solidiusculā, spirā valdē exsertā, acuminatā, columellā arcuatā, basi callosoplicatā, plicis subtilibus, numerosis; albidā, fusco sparsim tenuissimē lineatā et seriatim punctatā, punctis majoribus infra suturas.*

THE LANCEOLATE OLIVE. Shell fusiformly oblong, rather solid, spire much exserted, acuminate, columella arched, callously plicated at the base, plaits fine, numerous; whitish, sparingly very delicately lineated and spotted in rows with brown, the dots being larger beneath the sutures.

Hab. Caramaun, Island of Luzon (in sandy mud at eight fathoms), and Loay, Island of Bohol, Philippines (at the depth of sixty fathoms); Cuming.

A delicately-marked narrow acuminate shell, of rather solid growth.

Species 96. (Fig. a, b, Mus. Cuming.)

OLIVA BULLULA. *Oliv. testā acuminato-oblongā, tenui, subinflatā, spirā valdē exsertā, columellā arcuatā, basi subcallosā; pellucido-albā, zonā angustā opacā infra suturas.*

THE LITTLE BUBBLE OLIVE. Shell acuminately oblong, thin, rather inflated, spire much exserted, columella arched, rather callous at the base; transparent-white, with a narrow opaque zone beneath the sutures.

Hab. West Indies.

Like the smaller *O. myriadina*, this shell is of a thin pellucid substance without colour or marking.

Species 97. (Fig. a, b, Mus. Metcalfe.)

OLIVA PURA. *Oliv. testā lanceolato-oblongā, spirā valdē exsertā, columellā brevi, arcuatā, basi obscure bicipitatā; pellucido-albā, ad suturas subopacā.*

THE PURE OLIVE. Shell lanceolately oblong, spire very much exserted, columella short, arched, obscurely two-plaited at the base; transparent-white, slightly opaque at the sutures.

Hab. —?

Like the preceding species this shell is of a pellucid unspotted white, but its proportions are different, being narrower, more acuminate, and more solid.

Species 98. (Fig. a, d, b, Mus. Cuming.)

OLIVA PULCHELLA. *Oliv. testā acuminato-oblongā, tumidiusculā, spirā exsertā, columellā arcuatā, obscure multiplicatā; albidā, rufo-fusco tenuissimē lineatā, supra et infra seriatim punctatā, juxta suturas immaculatā.*

THE PRETTY OLIVE. Shell acuminately oblong, rather swollen, spire exserted, columella arched, obscurely many-plaited; whitish, very delicately lineated and dotted in rows above and below with red-brown, unstained next the sutures.

DUCLOS, Mon. Oliv. pl. 5. f. 11, 12.

Hab. West Indies.

The painting of this species is very similar to that of *O. lanceolata*, a smaller and more slenderly acuminate shell, but it differs in having spots invariably removed from the sutures.

Species 99. (Mus. Steere.)

OLIVA ROSOLINA. *Oliv. testā ovali, subventricosi, Tornatellaformi, spirā brevi, apice elatā, columellā brevi, supernē callosā, basi callosocontortā; albidā, lineis flexuosis fusciscentibus eximie notatā, basi columellæ intense roseā.*

THE ROSE-TIPPED OLIVE. Shell ovate, slightly ventricose, Tornatella-shaped, spire short, raised at the apex, columella short, callous at the upper part, callously twisted at the base; whitish, delicately marked with faint brown flexuous lines, base of the columella deep rose.

DUCLOS, Mon. Oliv. pl. 1. f. 1, 2.

Hab. West Indies.

Remarkably distinguished from all other species of the genus by its *Tornatella*-like form, and by the rich pink colouring of the base of the columella.

OLIVA.

	Plate.	Species.		Plate.	Species.
<i>acuminata, Lamarek</i>	XVI.	33	<i>fulminans, Lamarek</i>	VII.	10
<i>anzozoa, Duclou</i>	XXV.	74	<i>funeraria, Lamarek</i>	VII.	10
<i>Ancillarioides, Reeve</i>	XXI.	55	<i>fusiformis, Lamarek</i>	VIII.	11
<i>apiculata, Reeve</i>	XVIII.	38	<i>gibbosa (Voluta), Born.</i>	VIII.	12
<i>araneosa, Lamarek</i>	X.	16	<i>gracilis, Brod. & Sore.</i>	XX.	46
<i>Blania, Duclou</i>	XXII.	60	<i>Guildingii, Reeve</i>	XXVIII.	89
<i>attenuata, Reeve</i>	XXIX.	90	<i>guttata, Lamarek</i>	XIV.	30
<i>auricularia, Duclou</i>	XVIII.	38	<i>harpularia, Lamarek</i>	XIV.	28
<i>auricularia, Lamarek</i>	XVIII.	39	<i>hiatula (Voluta), Gmelin</i>	XVIII.	35
<i>australis, Duclou</i>	XIX.	42	<i>hieroglyphica, Reeve</i>	XXIV.	68
<i>bacillata, Lamarek</i>	XV.	31	<i>Indusica, Reeve</i>	XIX.	43
<i>biplicata, Sowerby</i>	XX.	48	<i>inflata, Lamarek</i>	XX.	31
<i>Brasiliensis, Chemnitz</i>	VIII.	13	<i>irisans, Lamarek</i>	VI.	8
<i>bulbiformis, Duclou</i>	XIII.	26	<i>ispidula (Voluta), Linnaeus</i>	XXVII.	34
<i>bullula, Reeve</i>	XXX.	96	<i>jaspidea, Duclou</i>	XIX.	44
<i>carulea, Wood</i>	XXI.	54	<i>jaspidea (Voluta), Gmelin</i>	XXII.	58
<i>caudata, Lamarek</i>	XVII.	34	<i>Julietta, Duclou</i>	IX.	15
<i>caricula, Lamarek</i>	XXII.	60	<i>kaleontina, Duclou</i>	XX.	49
<i>Caroliniana, Duclou</i>	XIII.	26	<i>lanceolata, Reeve</i>	XXX.	95
<i>cincta, Reeve</i>	XIX.	47	<i>lentiginosa, Reeve</i>	XIX.	45
<i>cingulata, Chemnitz</i>	VIII.	12	<i>leucophaea, Lamarek</i>	XIV.	30
<i>clausophila, Duclou</i>	XVIII.	39	<i>leucostoma, Duclou</i>	VII.	10
<i>columnellaris, Sowerby</i>	XXIII.	62	<i>leucostomias, Gray</i>	XXIV.	67
<i>conoidalis, Lamarek</i>	XXII.	58	<i>lignicola, Reeve</i>	XXI.	57
<i>contortuplicata, Reeve</i>	XX.	51	<i>lineolata, Gray</i>	XXIII.	63
<i>cruenta (Voluta), Dillwyn</i>	XIV.	30	<i>literata, Lamarek</i>	VI.	18
<i>Cumingii, Reeve</i>	XI.	19	<i>lugubris, Duclou</i>	XIII.	24
<i>cyanea, Reeve</i>	XXIV.	70	<i>lutrola, Lamarek</i>	XVI.	33
<i>dactyliola, Duclou</i>	XIII.	26	<i>Macleaya, Duclou</i>	VII.	10
<i>dana, Duclou</i>	XXIII.	63	<i>maculata, Duclou</i>	XIV.	30
<i>dealbata, Reeve</i>	XXV.	71	<i>mantichora, Duclou</i>	XIV.	30
<i>Duclosi, Reeve</i>	XIX.	44	<i>Maura, Lamarek</i>	VII.	10
<i>eburnea, Lamarek</i>	XXIII.	64	<i>millepunctata, Duclou</i>	XXVIII.	87
<i>elegans, Lamarek</i>	XII.	20	<i>modesta, Reeve</i>	XXVII.	83
<i>episcopalis, Lamarek</i>	XIII.	24	<i>monilifera, Reeve</i>	XXVII.	84
<i>erythrostoma, Lamarek</i>	V.	7	<i>multiplicata, Reeve</i>	XX.	52
<i>Esther, Duclou</i>	XXIII.	65	<i>mustelina, Lamarek</i>	XIII.	23
<i>finubriata, Reeve</i>	XXIX.	92	<i>mutica, Say</i>	XXVIII.	86
<i>flammulata, Lamarek</i>	XIX.	41	<i>myriadina, Duclou</i>	XXX.	94
<i>flavescens, Duclou</i>	XVII.	34	<i>nana, Lamarek</i>	XXIII.	66
<i>fulgida, Reeve</i>	XXVI.	78	<i>nebulosa, Lamarek</i>	XVI.	32

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	Plate.	Species.		Plate.	Species.
<i>nedulina</i> , Duclos	XXV.	73	<i>Senegalensis</i> , Lamarck	IX.	14
<i>nivea</i> (<i>Foluta</i>), Gmelin	XXIII.	64	<i>sepulchralis</i> , Lamarck	VII.	10
<i>nobilis</i> , Reeve	II.	3	<i>splendidula</i> , Sowerby	XI.	17
<i>obesina</i> , Duclos	X.	16	<i>Stainforthii</i> , Reeve	XIX.	40
<i>Olympiadin</i> , Duclos	III.	5	<i>stellata</i> , Duclos	XVII.	34
<i>oriola</i> , Lamarck	XVII.	34	<i>Stecræ</i> , Reeve	XVIII.	37
<i>oryza</i> , Lamarck	XXVII.	81	<i>strigata</i> , Reeve	XXV.	72
<i>ozodona</i> , Duclos	XXV.	73	<i>subulata</i> , Lamarck	XVI.	100
<i>panniculata</i> , Duclos	XXVI.	77	<i>tergina</i> , Duclos	XXVI.	80
<i>patula</i> , Sowerby	XVIII.	39	<i>tessellata</i> , Lamarck	XX.	53
<i>paxillus</i> , Reeve	XXI.	56	<i>testacea</i> , Lamarck	XVIII.	36
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<i>Peruviana</i> , Lamarck	IX.	14	<i>tigridella</i> , Duclos	XVII.	34
<i>Philantha</i> , Duclos	XII.	22	<i>tigrina</i> , Lamarck	XII.	21
<i>picta</i> , Reeve	XXVI.	79	<i>Timoria</i> , Duclos	X.	16
<i>pindarina</i> , Duclos	X.	16	<i>todosina</i> , Duclos	XXII.	60
<i>polpasta</i> , Duclos	XIV.	29	<i>tremulina</i> , Lamarck	IV.	6
<i>ponderosa</i> , Duclos	II.	4	<i>tricolor</i> , Lamarck	XII.	22
<i>pulchella</i> , Duclos	XXX.	98	<i>triticea</i> , Duclos	XXVII.	82
<i>pura</i> , Reeve	XXX.	97	<i>undata</i> , Lamarck	XV.	31
<i>pygmaea</i> , Reeve	XXVI.	75	<i>undatella</i> , Lamarck	XXV.	73
<i>reticularis</i> , Lamarck	X.	16	<i>utriculus</i> , Chemnitz	VIII.	12
<i>rosolina</i> , Duclos	XXX.	99	<i>venulata</i> , Duclos	X.	16
<i>rufifasciata</i> , Reeve	XXVIII.	88	<i>volutella</i> , Lamarck	XXI.	54
<i>rufula</i> , Duclos	XX.	50	<i>Volvarioides</i> , Duclos	XXII.	59
<i>sanguinolenta</i> , Lamarck	XIII.	25	<i>zanoeta</i> , Duclos	XXVI.	76
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<i>semistrinata</i> , Gray	XXIII.	61	<i>zonalis</i> , Lamarck	XXIX.	91

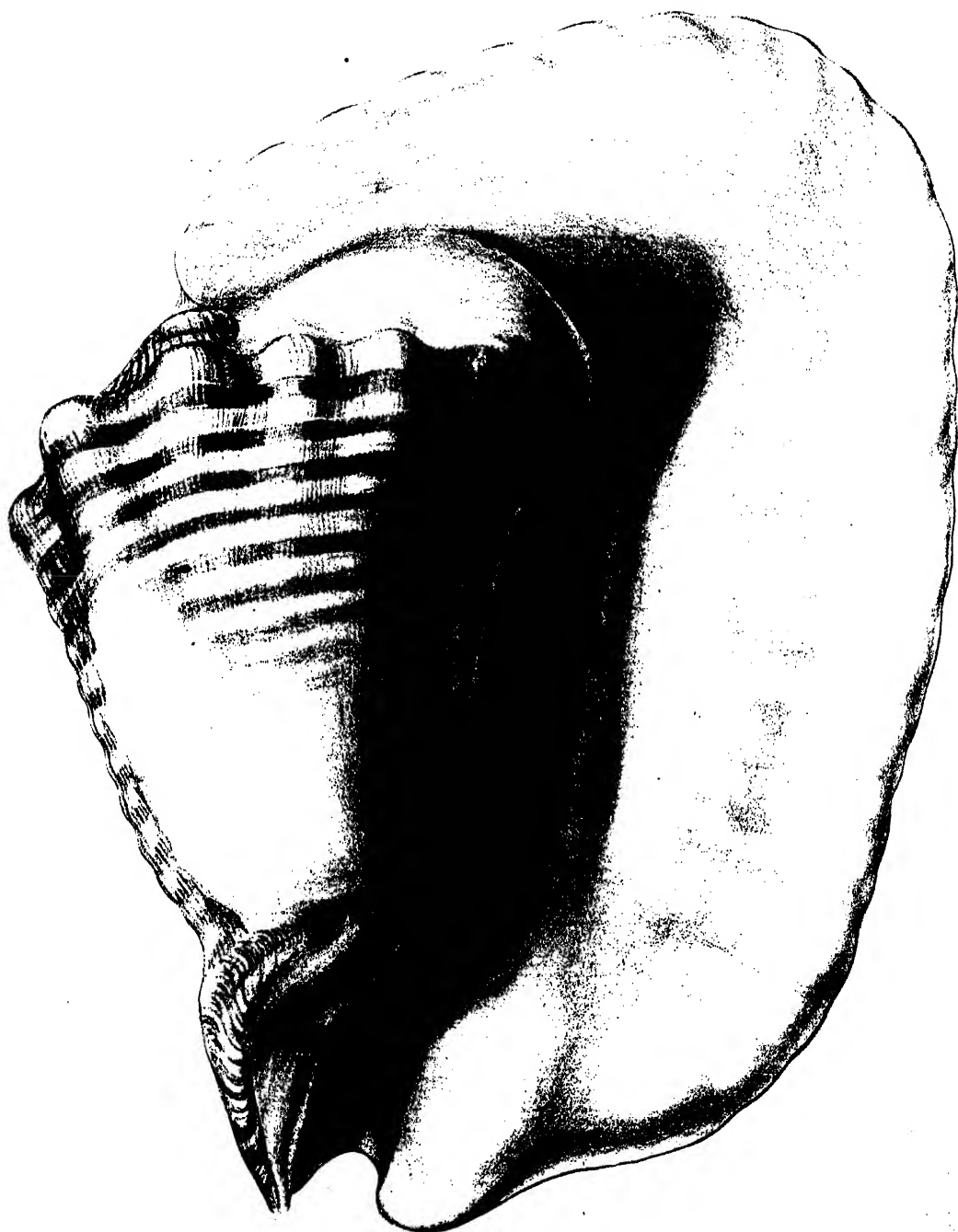
ERRATUM.

Species 70. For *O. cœrulea*, read *O. cyanea*.

MONOGRAPH
OF THE GENUS
STROMBUS.

O! what an endless work have I in hand
To count the seas' abundant progeny,
Whose fruitful seeds farre passeth those in land,
And also those which wonne in the azure sky.—*Spenser.*





STROMBUS.

PLATE I.

Genus STROMBUS, *Linnaeus*.

Testa nunc conica vel ovata, nunc fusiformi-turrila, anfractibus saepissimè tuberculatis vel nodatis, basi truncatâ vel recurvâ, columellâ lævi, plerumque callosâ, interdum corrugatâ, labro in alam aut simplicem aut lobatam plus minus ampliata, prope basin latè sinuato, aperturâ plerumque corrugatâ, basi emarginatâ. Operculum corneum, parvum, anticè attenuatum.

Shell sometimes conical or ovate, sometimes fusiformly turreted, whorls most frequently tubercled or noded, truncated or recurved at the base, columella smooth, generally callous, sometimes wrinkled, lip more or less enlarged into a simple or lobed wing, broadly sinuated near the base, aperture mostly wrinkled, emarginated at the base. Operculum horny, small, attenuated anteriorly.

The genus *Strombus* comprises those species of the winged family, *Alata*, in which the expanded wing-like lip is simple, not developed into channelled claws. The shell is convoluted, broad, and compact, with a short spire, as in *S. galeatus*, or with the spire acuminated into a tall pyramid, as in *S. Thersites*. Again, it is strictly conical, as in *S. fasciatus*, or drawn out into an elongated spindle, as in *S. vittatus*. The expanded wing-like lip is the principal seat of specific character. Every species has its peculiar condition of lip, varying in form, sculpture, and colour. The principal variation in the form of the lip is in the upper, or rather hinder, part, which is widely flatly spread, as in *S. Goliath* and *epidromis*; prolonged into a channelled lobe, as in *S. gallus* and *tricornis*; into a short finger-shaped lobe, as in *S. auris-Diane* and *Novæ-Zelandiæ*; or crested, as in *S. laciniatus*; whilst in some species, as *S. bulbulus* and *Samarensis*, the lip is expanded in the lower or front part.

The chief peculiarity in the sculpture of this genus lies in the aperture and columella, which are mostly wrinkled or granulated. The *Strombi* are generally heavily tubercled or noded round the upper part of the whorls, and, as in the *Volutes*, the tubercles or nodules are more or less developed in different individuals of the same species. The *Strombi* are brilliantly coloured, the most characteristic varieties of colour residing in the aperture, that is, on the columella and on the inner surface of the expanded lip.

The whorls of the shell are not always convoluted symmetrically. In *S. gibberulus* and *Mauritanus*, for exam-

ple, the spire shows the whorls to be very rudely lodged one upon the other in the process of convolution. The first few whorls of most of the species have a small varix deposited at intervals, but this, instead of increasing in size and regularity with the growth of the shell, as in *Murex* or *Triton*, gradually disappears. The varix is one of those characters which, being a prominent feature in the allied family of *Canalifera*, exists here only in a rudimentary form.

The habitats of all the *Strombi* are known, with the exception of the large *S. Goliath* and the little *S. hæmastoma*. By far the greater portion inhabit the eastern world; twenty-six out of fifty-three species were collected by Mr. Cuming at the Philippine Islands. Of these, two, *S. canarium* and *Sibbaldii*, are found also at Ceylon, and one, *S. rugosus*, was collected by Sir E. Belcher on the shores of Korea. Another Philippine species, *S. floridus*, inhabits also the Society Islands; a fourth, *S. elegans*, is found also on the shores of the Red Sea; and two species, *S. urceus* and *variabilis*, range southward to North Australia. As in the genus *Comus*, the Philippine *Strombi* are all of small size, with the single exception of the fine *S. latissimus*. There are no *Strombi* in the Mediterranean, or in any part of the Atlantic north of the West Indies and Cape de Verd Islands; but a fine species, *S. Japonicus*, of a type inhabiting the Philippine Islands, is recorded from Japan, in the geographic latitude of the southern shores, but in the isothermal latitude of the northern shores, of the Mediterranean. As in the case of many genera which are so abundantly and typically represented among the islands of the Eastern Archipelago, there is no species on either side of South America below the equator, with the singular exception of the fine *S. granulatus* from the Gallapagos Islands. The fine large *S. Peruvianus* is from the Bay of Caracas. Six species, inhabiting the shores of the West Indies, are all of large size, and one of these, *S. tricornis*, as in the case of the Olives, occurs also in the Red Sea. Another West Indian species, *S. pugilis*, is represented in the Gulf of Mexico adjoining, by the *S. alatus*, and at Panama by *S. gracilior*. The only other American species is the fine large *S. galeatus* from the Gulf of Nicoya. The only *Strombi* recorded from the African coast are two from Zanzibar, *S. variabilis* and *columba*, one identical in species with the same from the Philippine Islands, the other of a similar type. One species, *S. maculatus*, is reported from the Sandwich Islands;

one, *S. Novæ-Zelandiæ*, from New Zealand; and four, *S. fusiformis*, *deformis*, *Australis*, and *Campbelli*, as being peculiar to Australia.

Species 1. (Mus. Brit.)

STROMBUS GOLIATH. *Stromb. testâ subquadrato-ovalâ, peramplâ, crassâ, ponderosâ, spirâ brevi, anfractibus transversim biseriatim sulcatis, supernè plicato-tuberculatis, tuberculis rotundatis, obtusis, columellâ callosâ, basi incurvâ, labro in alani rotundalam supra spiram latissimè expanso; albidâ, rufo-fusco apicem versus maculatâ, columellâ et aperturæ fauce luteo et rufescente pallidè linctis.*

THE GOLIATH STROMBUS. Shell somewhat squarely

ovate, very large, thick, ponderous, spire short, whorls transversely grooved in double rows, plicately tubercled round the upper part, tubercles rounded, obtuse, columella callous, incurved at the base, lip very broadly expanded above the spire into a rounded wing; whitish, spotted towards the apex with red-brown, columella and interior of the aperture faintly tinged with pink and yellow.

CHEMNITZ, Conch. Cab. vol. xi. p. 147. pl. 195 A.

Hab. — ?

This is a very distinct species from *S. gigas*, although it partakes in a manner of the character of some of its varieties. The bold lofty expansion of the lip is very characteristic, and it has none of the bright pink colouring of *S. gigas*.





STROMBUS.

PLATE II.

Species 2. (Mus. Brit.)

STROMBUS GIGAS. *Stromb. testā subquadrato-ovatā, peramplā, basin versus contractā et costatā, deinde contortā, spirā exsertā, acuminatā, anfractibus transversim superficialiter sulcatis et rugosis, supernè squamato-tuberculatis, tuberculis numerosis, prominentibus, divergentibus, aperturā peramplā, labro latè expanso, supernè in alam angulatam producto; pallidè spadiceo-epidermide tenuiculā fuscescente indutā, columellā et aperturæ faucē intensè roseis.*

THE GIANT STROMBUS. Shell somewhat squarely ovate, very large, contracted and ribbed towards the base, then twisted, spire exserted, acuminate, whorls transversely superficially grooved and rough, squamately tubercled round the upper part, the tubercles being numerous, prominent, divergent, aperture very

large, lip broadly expanded, produced at the upper part into an angular wing; light fawn-colour, covered with a rather thin fawn epidermis, columella and interior of the aperture deep pink.

LINNEUS, Syst. Nat. (12th edit.) p. 1210.

An eadem? *Strombus lucifer*, Linnaeus.

Hab. West Indies.

This fine species, which is sometimes imported in large quantities from the West Indies for the use of the cameo artist, is remarkable for the delicate pink colouring of its widely expanded aperture. The tuberculated growth of the spire is also a conspicuous feature; the tubercles are not, however, always quite so prominently developed as in the specimen selected for illustration, which is one of rather small dimensions.

November, 1850.

2

3



STROMBUS.

PLATE III.

Species 3. (Mus. Cuning.)

STROMBUS GALEATUS. *Stromb. testā subquadrato-ovatā, crassā, ponderosā, spirā brevissimā, apice acutā, anfractibus transversim costatis, supernè tumidiis, rotundatis, leviter canaliculatis, aperturā subamplā, labro expanso, crenato; fuscescente, epidermide crassā olivaceo-brunnēā indutā, aperturæ fauce albiā, columellā labroque rufo-aurantio tinctis.*

THE HELMET STROMBUS. Shell somewhat squarely ovate, whorls transversely ribbed, swollen and rounded at the upper part, slightly channelled, aperture rather large, lip expanded, crenated; brownish, covered with a thick olive-brown epidermis, interior of the aperture whitish, lip and columella tinged with orange-red.

SWAINSON, Philosophical Magazine.

Strombus crenatus, Sowerby (in Tankerville Cat.).

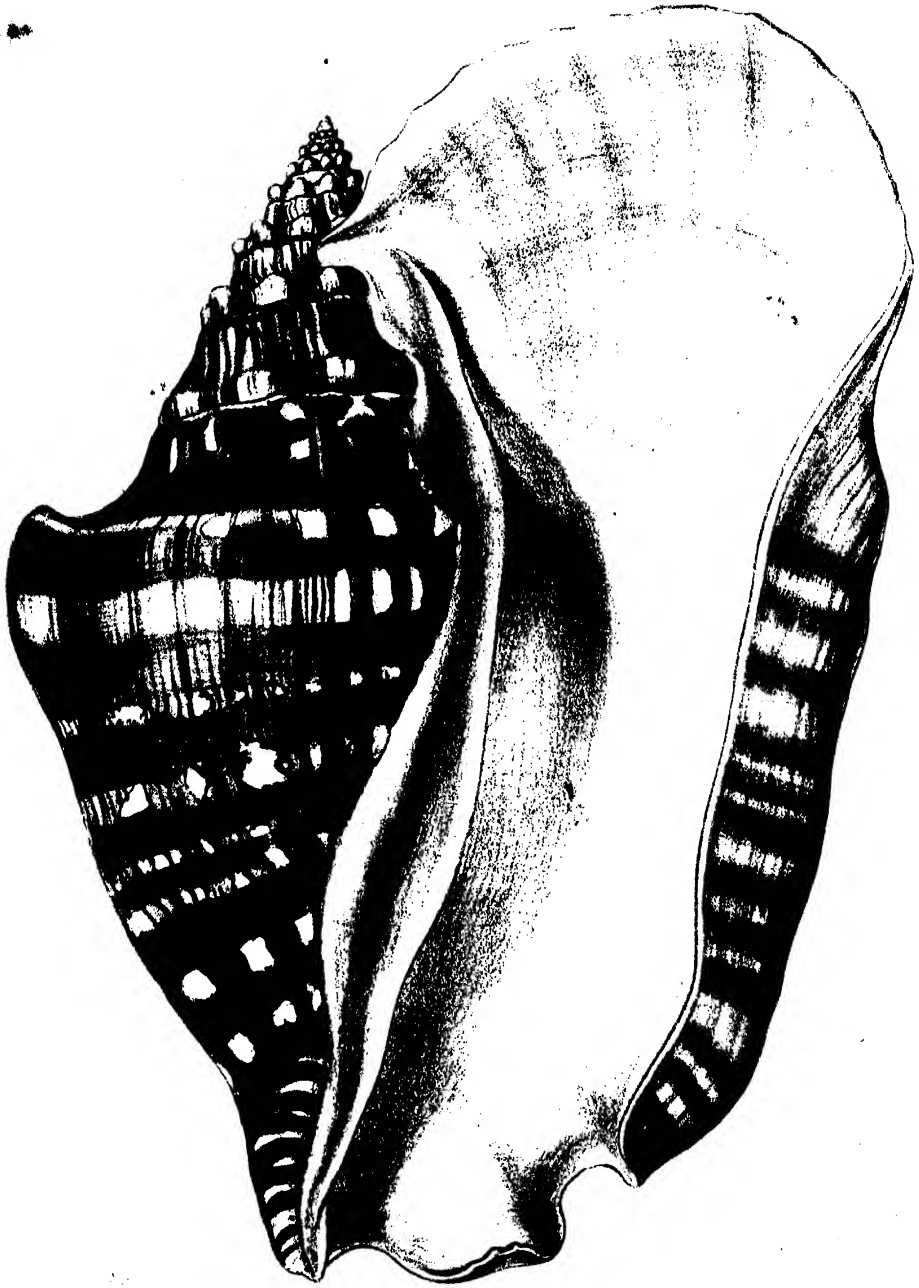
Strombus galea, Wood.

Hab. Gulf of Nicoya, Central America (on the reefs at low water); Cuning.

The body of this shell is chiefly distinguished by its ventricose conical form, and transversely ribbed structure, the spire being very short but raised at the apex. The lip is boldly expanded, the upper extremity of it being on a plane with the spire, as in some of the *Cassides*. The edge of the lip is crenated in a manner to correspond with the outer ribs. The epidermis is rather stout and of a rich olive-brown colour.

November, 1850.





STROMBUS.

PLATE IV.

Species 4. (Mus. Cuming.)

STROMBUS LATISSIMUS. *Stromb. testā fusiformi-ovatā, medio rudē gibbosā et tuberculatā, spirā conicā, acuminatā, regulariter nodosā, anfractibus supernè leviter concavis, levibus, labrum verius radiatim promiscuè liratis, labro ultra spiram latissimè expanso, limbo ad latus peculiariter crassè reflexo; aurantio-fuscā, longitudinaliter hic illic lineatā, maculis albis promiscuè interruptā, aperturæ fauce carneolo-albā.*

THE VERY BROAD STROMBUS. Shell fusiformly ovate, rudely gibbous and tubercled in the middle, spire conical, acuminate, regularly noded, whorls slightly concave round the upper part, smooth, promiscuously radiately ridged towards the lip, which is

broadly expanded beyond the spire, edge of the lip peculiarly thickly reflected at the side; orange-brown, here and there longitudinally lined, interrupted promiscuously with white blotches, interior of the aperture carnation-white.

LINNÆUS, Syst. Nat. (12th edit.) p. 1211.

Pterocera alata, Schumacher.

Hab. Matnog, Island of Luzon, Philippines (on the reefs at low water); Cuming.

The chief peculiarity of this species consists in the curious manner in which the widely expanded lip is reflected inwards at the side, and which is only slightly indicated in any other. Although known to Linneus, the *S. latissimus* is still of rare occurrence.



5. a.



5. b.



6.



7. b.

STROMBUS.

PLATE V.

Species 5. (Mus. Saul.)

STROMBUS HEMASTOMA. *Stromb. testā acuminato-oblongā, hic illic conspicuē et subrudē varicosā, anfractibus transversim creberrimē elevato-lineatis, longitudinaliter plicatis, supernē irregulariter tuberculatis, costā tumidā, pone labrum, columellā tenuē corrugatā, aperturā parvā, labro subincrassato, intus tenuē corrugato, sinu amplo; albidā, columellā intensē rosēā.*

THE RED-MOUTH STROMBUS. Shell acuminately oblong, here and there conspicuously and somewhat rudely varicose, whorls transversely very closely lineated, lines raised, longitudinally plicated, irregularly tubercled at the upper part, with a swollen rib behind the lip, columella finely wrinkled, aperture small, lip rather thickened, finely wrinkled within, sinus large; whitish, columella very deep pink.

SOWERBY, *Thesaurus Conch.* p. 31. pl. 7. f. 51.

An eadem? *Strombus Helli*, Rousseau.

Hab. — ? *Peruvia* (Mus. Saul.).

A small stout species, of which the accompanying figure is a magnified representation. It is strongly varicose, and the sinus of the lip is unusually distinct. The aperture is very much contracted, with the columella of an intense rose-colour.

Species 6. (Mus. Cuming.)

STROMBUS PERUVIANUS. *Stromb. testā subtrigonā, crassā, ponderosā, basi contorto-recurvā, spirā depressiusculā, apicem versus acuminatā, anfractibus spiraliter costatis, supernē obtusē angulatis, ad angulum tuberculatis, tuberculo mediano dorsali valdē prominente, labro ampliter trigono-dilatato, supernē sublobato, columellā supernē corrugatā; flavescēte-castaneā, interdum submarmoratā, columellā et aperturā fauce carneolo-rufis.*

THE PERUVIAN STROMBUS. Shell somewhat triangular, thick, ponderous, recurved in a twisted manner at the base, spire rather depressed, acuminated towards the apex, whorls spirally ribbed, obtusely angled at the upper part, tubercled at the angle, middle dorsal tubercle very prominent, lip largely triangularly dilated, slightly lobed above, columella wrinkled at the

upper part; yellowish-chestnut, sometimes a little marbled, columella and interior of the aperture carnelion-red.

SWAINSON, *Zool. Illus.* Second Series, vol. i. pl. 39.

Hab. Bay of Caracas, West Columbia (on the reefs at low water); Cuming.

This fine species is remarkable for the triangular dilatation of the lip, and for its general massive structure, the columella and interior of the aperture being of a deep carnelion-rouge colour. Several fine specimens were collected by Mr. Cuming in the above-named locality.

Species 7. (Fig. a, b, Mus. Cuming.)

STROMBUS FUSIFORMIS. *Stromb. testā fusiformi, spirā valdē acuminatā, apicem versus varicosā, anfractibus juxta suturas marginalis, levibus, ultimo basi et pone labrum radiatim lirato, labro subincrassato, ad suturam anfractibus penultimū parrecto, intus corrugato, columellā tenuē corrugatā; albā, rufo-fuscescente interruptē fasciatā et marmoratā, aperturā fauce pallidē coccineā.*

THE FUSIFORM STROMBUS. Shell fusiform, spire much acuminated, varicose towards the apex, whorls margined next the sutures, smooth, last whorl ridged at the base, and, in a rayed manner, behind the lip, lip rather thickened, reaching up to the suture of the penultimate whorl, wrinkled within, columella finely wrinkled; white, banded and marbled in an interrupted manner with red-brown, interior of the aperture tinged with scarlet.

SOWERBY, *Thesaurus Conch.* p. 31. pl. 9. f. 91, 92.

Hab. North Australia; Jukes.

An extremely interesting species, partaking of the characters of *Rostellaria*, inasmuch as the lip reaches over the body-whorl to the suture of the one preceding. The localities Red Sea and Indian Ocean, given, without authority, by M. Deshayes, are probably erroneous, the specimen here figured being collected by Mr. Jukes in H.M.S. Fly, at North Australia.

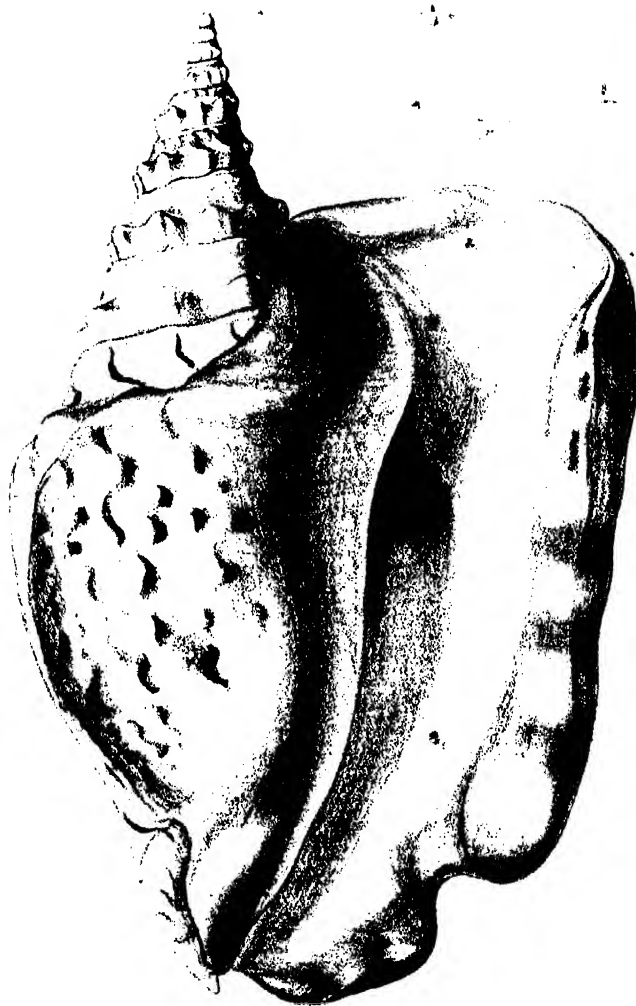




8. a.



8. b.



9.



10. a.



10. b.

STROMBUS.

PLATE VI.

Species 8. (Fig. a, b, Mus. Cuming.)

STROMBUS BULBULUS. *Stromb. testā oblongo-cylindraceā, Terebelliformi, spirā breviusculā, peculiariter gibbosolumidā, ad apicem tenuivaricosā, anfractibus levibus, politis, ultimo basi inciso-sulcato, labro subinflexo, intus tenuè corrugato; albidā aut flavicante, castaneo-rufescente pulchrè marmoratā, columellā et aperturæ fauce purpureo-nigricantibus.*

THE LITTLE-BULB STROMBUS. Shell oblong-cylindrical, Terebellum-shaped, spire rather short, peculiarly gibbously swollen, finely varicose at the apex, whorls smooth, polished, last whorl sharply grooved at the base, lip slightly inflected, finely wrinkled within; whitish or yellowish, prettily marbled with light chestnut-red, columella and interior of the aperture purple-black.

SOWERBY, Pro. Zool. Soc. 1842, p. 144.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

Mainly characterized by the swollen appearance of the penultimate whorl, in which respect the species partakes of the character of *S. gibberulus*.

Species 9. (Mus. Cuming.)

STROMBUS THERSITES. *Stromb. testā oblongo-ovatā, crassā, ponderosā, spirā peculiariter pyramidalis-acuminatā, acutè nodosā, anfractibus obsolete spiraliter costatis, superne concavis, deinde tuberculato-nodatis, nodis in anfractu ultimo gibbosis, ferè evanidis, aperturā subquadrato-oblongā, labro supra columellam subampliter dilatato, valde incrassato, sinu conspicuo; albidā, rufo-fusco purpureo-umbratā, variè nebulatā, columellā et aperturæ fauce pallidè carneolis, labro ustulato-fusco pallidè maculatō.*

THE THERSITES STROMBUS. Shell oblong-ovate, thick, ponderous, spire peculiarly pyramidally acuminate, sharply nodose, whorls obsoletely spirally ribbed,

concave round the upper part, then tubercularly noded, nodules gibbous and almost faded in the last whorl, aperture somewhat squarely oblong, lip rather largely dilated above the columella, much thickened, with the sinus conspicuous; whitish, variously clouded with purple-shaded red-brown, columella and interior of the aperture pale carnelion, lip blotched with pale burnt-brown.

GRAY, Sow. Thesaurus Conch. pl. 33. pl. 10. f. 109.

Hab. Society Islands (on the reefs); Cuming.

This fine species, of which only two or three examples are known, is remarkably distinguished by the sharply noded pyramidal elevation of the spire. The lip is very boldly dilated and the purple-shaded marking of the body-whorl is peculiar.

Species 10. (Fig. a, b, Mus. Cuming.)

STROMBUS TERESELLATUS. *Stromb. testā oblongo-cylindraceā, basi truncatā, Terebelliformi, subinflatā, spirā exsertā, tumidiusculā, anfractibus levibus, politis, ultimo pone labrum tumido, quasi varicoso, columellā subarenatā, aperturæ fauce tenuè corrugatā; flavicante-albā, rufo-castaneo pulchrè nebulatā et variegatā, rugis aperturæ faucis purpureo-rufis.*

THE AWL-SHAPED STROMBUS. Shell oblong-cylindrical, truncated at the base, Terebellum-shaped, rather inflated, spire exerted, rather swollen, whorls smooth, polished, last whorl swollen as if varicose, columella slightly arched, interior of the aperture finely wrinkled; yellowish-white, prettily clouded and variegated with red-chestnut, wrinkles of the interior of the aperture purple-red.

SOWERBY, Thesaurus Conch. p. 31. pl. 9. f. 84, 85.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

The aperture of this species is peculiarly carved with coloured wrinkles, not extending to the lip as in *S. bulbulus*.



11. a.



11. b.



12.



11. c.



11. d.

STROMBUS.

PLATE VII.

Species 11. (Fig. *a, b*, Mus. Cuming;
Fig. *c, d*, Mus. Saul.)

STROMBUS FLORIDUS. *Stromb. testā oblongo-ovatā, incrassatā, basi inciso-sulcatā, spirā plerumque breviusculā, interdum exsertā, anfractibus spiraliter subtiliter liralis et lineatis, supernè gibbosis, juxta suturas marginatis, deinde obtusè angulatis, ad angulum obliquè tuberculatis, tuberculis interdum ferè evanidis, columellā laminato-incrassatā, undique tenuè corrugatā, aperturā oblongā, faucē tenuè corrugatā, labro incrassato, supernè subdilato, quasi tuberculum formante; albidā, flavicante interdum tinctā, aurantio-fusco vel purpureo-nigro variè maculatā aut strigatā, aperturæ faucē pallidè corcineo-roseā.*

THE FLOWERY STROMBUS. Shell oblong-ovate, thickened, sharply grooved at the base, spire generally rather sharp, sometimes exserted, whorls spirally finely ridged and lined, margined next the sutures, then obtusely angled, obliquely tubercled at the angle, tubercles sometimes fading away, columella laminately thickened, finely wrinkled throughout, aperture oblong, interior finely wrinkled, lip thickened, slightly dilated at the upper part, as if to form a tubercle; whitish, sometimes yellow-stained, variously blotched or streaked with orange-brown or purple-black, interior of the aperture delicate scarlet-pink.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 707.

Strombus mutabilis, Swainson.

Hab. Island of Ticao and Bohol, Philippines, and Society Islands (on the reefs); Cuming.

This species, as Mr. Swainson's name for it indicates, is very changeable both in form and colouring. Its characters of sculpture are constant. The spire is mostly rather short, but sometimes it is elongated as in the specimen represented at Fig. 11 *c, d*. The more acuminate the spire is in this genus, the more noduled it is. This peculiarity is well illustrated in the specimens of *S. floridus* represented

in the accompanying plate, and we have a remarkable instance of the attenuated nodulous spire in *S. Thersites* of the preceding plate. In *S. floridus* the columellar lamina is unusually thickened, and the outer lip is callously dilated where it joins this on the body-whorl, as if to form a tubercle.

Species 12. (Mus. Brit.)

STROMBUS ACCIPITRINUS. *Stromb. testā subquadrato-ovatā, obesā, crassā, ponderosā, basi abruptè recurvā, spirā brevi, acutā, spiraliter multiliratā, obscurè nodosā, anfractibus radialium subobsolete costatis, supernè depresso-concavis, ad angulum nodoso-tuberculatis, tuberculis dorsalibus anfractibus ultimi peramplis, columellā callosā, labro angulatō dilatato, sæpè valdè incrassato; spadicero-albā, interdum rufo-fasciatā, epidermide tenui fusca intulā, columellā et aperturæ faucē albis, interdum rufescentibus.*

THE HAWK-WING STROMBUS. Shell somewhat squarely ovate, stout, thick, ponderous, abruptly recurved at the base, spire short, sharp, spirally many-ridged, obscurely nodose, whorls radiately rather obscurely ribbed, depressly concave round the upper part, nodosely tubercled at the angle, dorsal tubercles of the last whorl very large, columella callous, lip angularly dilated, often very much thickened; fawn-white, sometimes faintly red-banded, covered with a thin brown epidermis, columella and interior of the aperture reddish or white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 687.

Eadem var. *Strombus inermis*, Swainson.

Strombus costatus, Gmelin (not of Da Costa).

Hab. West Indies.

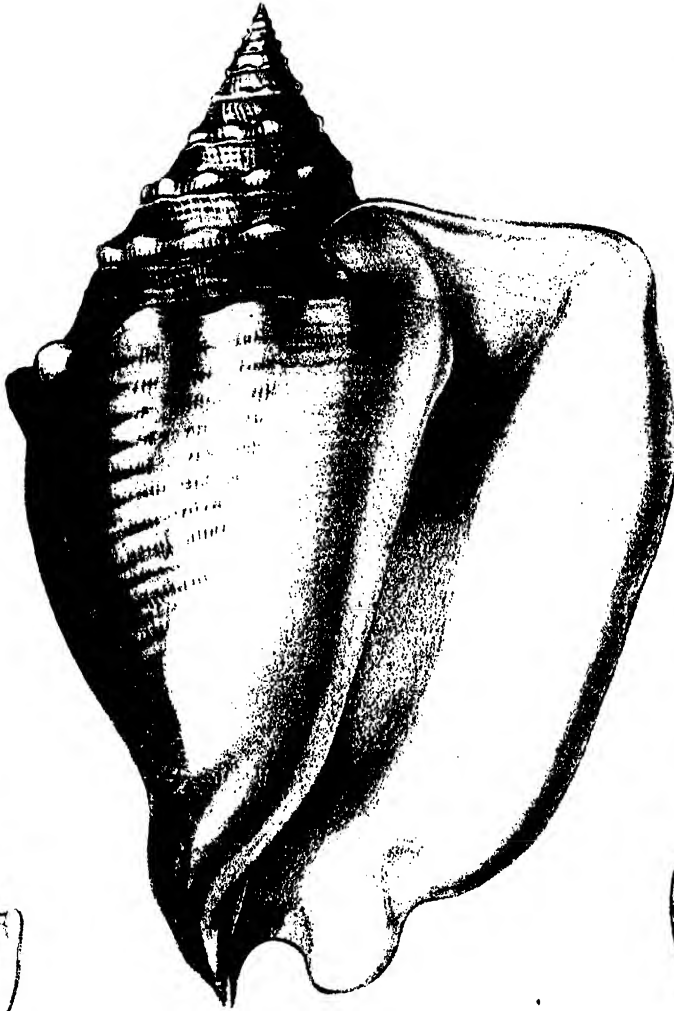
Distinguished by its compact massive form and noduled spire, which, though short, is always sharply acuminate. The specimen here figured from the British Museum is tinged with red, but the species is mostly white, sometimes acquiring with age a dark metallic hue.



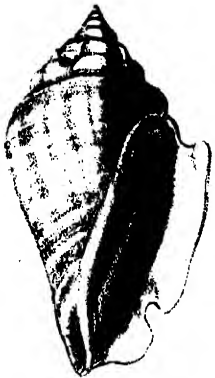
13. a.



13. b.



14.



15. a.



15. b.

STROMBUS

PLATE VIII.

Species 13. (Fig. a, Mus. Cuming.)

STROMBUS RUPPELLII. *Stromb. testā oblongo-fusiformi, spirā acuminato-turritā, anfractibus supernè concavo-depressis, subangulatis, ad angulum plicato-tuberculatis, tuberculis numerosis, anfractu ultimo pone labrum longitudinaliter costato et radiatim tenuilirato, columellā incrassatā, laminatā, supernè subtiliter corrugatā, aperturæ fauce corrugatā; flavicante-albā, ustulato-fusco hic illic tinctā et fusciatā, labro purpureo-fusco; fasciis angustis albis radiato, columellā et aperturæ fauce intensè purpureo-fuscis.*

RUPPELL'S STROMBUS. Shell oblong-fusiform, spire acuminately turreted, whorls concavely depressed round the upper part, slightly angled, plicately tubercled on the angle, tubercles numerous, last whorl ribbed longitudinally behind the lip and radiately finely ridged, columella thickened, laminated, finely wrinkled at the upper part, interior of the aperture wrinkled; yellowish-white, stained and banded here and there with burnt-brown, lip purple-brown, rayed with narrow white bands, columella and interior of the aperture rich purple-brown.

Red Sea; Ruppell.

An acuminately turreted species, closely plicately ribbed, in which the swollen longitudinal rib behind the lip is characterized by a purple-brown colouring crossed with narrow white rays.

The shell represented at Fig. 13 b is in bad condition, and can scarcely be referred to this species without doubt.

Fig. 14. (Mus. Brit.)

STROMBUS ACCIPITRINUS, var. This shell is the *S. inermis* of Swainson in the Bligh Catalogue, and of Sowerby in *Thesaurus Conchyliorum*, but on com-

parison with *S. accipitrinus* I find it to be merely a state of that species in which the shell is of lighter growth, the spire more acuminated, and the tubercles smaller and more regular. The detail of sculpture is alike in both varieties.

Species 15. (Fig. a, b, Mus. Cuming.)

STROMBUS GIBBERULUS. *Stromb. testā oblongo-conica, basin versus attenuatā, spirā exertā, acutā, anfractibus supernè inæqualiter gibbosis, quasi distortis, hic illic varicosis, juxta suturas marginatis, transversim rarè striatis et liris, nonnunquam partim lorigatis, columellā larigatā, aperturæ fauce sapissimè tenuè corrugatā; albidā aut flavicante, rufo-fusco interdum autem rarè fusciatā, columellā et aperturæ fauce nunc roseis, nunc purpureis aut violaceis.*

THE HUNCH-BACKED STROMBUS. Shell oblong-conical, attenuated towards the base, spire exerted, sharp, whorls unequally gibbous, as though distorted, here and there varicose, margined next the sutures, transversely variously ridged and striated, sometimes partially smooth, columella smooth, interior of the aperture most frequently finely wrinkled; whitish or yellowish, sometimes, but rarely, banded with mottled red-brown, columella and interior of the aperture sometimes pink, sometimes purple or violet.

LINNÆUS, Syst. Nat. (12th edit.) p. 1210.

Hab. Philippine Islands (in sand at low water), and Society Islands (on the coral reefs); Cuming. Red Sea; Forshall.

This well-known gibbously distorted species has a wide geographical range in the eastern and east-Pacific Seas, varying considerably in colour, but constant in its peculiarity of forms.





16.



17.



18.



19.



20.

STROMBUS.

PLATE IX.

Species 16. (Mus. Belcher.)

STROMBUS RUGOSUS. *Stromb. testâ fusiformi-oblongâ, spirâ turritâ, anfractibus spirâliter creberrimè liralis, supernè rotundato-angulatis, ad angulum tumidiusculis et plicato-costatis, costis corrugatis, anfractu ultimo costâ tumidâ prominente pone labrum, columellâ crassè laminatâ, aperturæ fauce subtilissimè corrugatâ; albidâ, ustulato-fusco linctâ et fasciatâ, columellâ et aperturæ fauce albis.*

THE WRINKLED STROMBUS. Shell fusiformly oblong, spire turreted, whorls spirally very closely ridged, rotundately angled, rather swollen and plicately ribbed at the angle, ribs corrugate, last whorl with a prominent swollen rib behind the lip, columella thickly laminated, interior of the aperture very finely wrinkled; whitish, stained and banded with burnt brown, columella and interior of the aperture white.

OWERBY, Tankerville Catalogue, App. p. xx.

Strombus corrugatus, Adams and Reeve.

Hab. Korea; Belcher.

Mr. Sowerby's description of this species in the Appendix to the Tankerville Catalogue was overlooked by Mr. Adams and myself, when occupied with the Mollusca of the Voyage of the Samarang.

Species 17. (Mus. Cuming.)

STROMBUS DENTATUS. *Stromb. testâ fusiformi-oblongâ, spirâ turritâ, anfractibus spirâliter creberrimè tenuiliralis, supernè angulatis, ad angulum confertim plicato-costatis, costis anticis basin versus descendentes, labrum versus gradatim compresso-tuberculatis, columellâ crassè laminatâ, labro incrassato, aperturæ fauce subtilissimè corrugatâ; griseo-albidâ, nigro-punctatâ, zonulis angustis albis cingulatâ, columellâ aut aperturæ fauce purpureo-aurantiâ.*

THE TOOTHED STROMBUS. Shell fusiformly oblong, spire turreted, whorls spirally very closely finely ridged, angled at the upper part, closely plicately ribbed at the angle, front ribs descending towards the base, gradually compressly tubercled towards the lip, columella thickly laminated, lip thickened, interior of the aperture finely wrinkled; greyish-white, black-speckled, encircled with narrow white zones, columella orange, interior of the aperture purple-orange.

LINNÆUS, Syst. Nat. (12th edit.) p. 1213.

Strombus plicatus, Lamarck.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

In the absence of a dentated lip, the compressed dorsal tubercles may probably have suggested the name by which Linnaeus distinguished this species.

Species 18. (Mus. Cuming.)

STROMBUS GALLUS. *Stromb. testâ oblongâ, basi attenuatâ et contortâ, spirâ exsertâ, conicâ, anfractibus spirâliter striatis et costatis, supernè concavis et angulatis, ad angulum nodoso-tuberculatis, tuberculis dorsalibus prominentibus, compressis, columellâ callosâ, labro latè expanso, supernè in lobum attenuatum producto; flavicante-albâ, rufo-fusco nebulatâ et variegatâ, columellâ et aperturæ fauce pallidè carneolis.*

THE ANGEL'S WING STROMBUS. Shell oblong, attenuated and twisted at the base, spire exserted, conical, whorls spirally striated and ribbed, concave and angled at the upper part, nodosely tubercled at the angle, dorsal tubercles prominent, compressed, columella callous, lip broadly expanded, produced at the upper part into an attenuated lobe; yellowish-white, clouded and variegated with red-brown, columella and interior of the aperture pale carnelion.

LINNÆUS, Syst. Nat. (12th edit.) p. 1209.

Hab. Red Sea; Earl Mountnorris.

This well-known species varies little except in the prolongation of its characteristic lobe. It exhibits scarcely any change of colour.

Species 19. (Mus. Cuming.)

STROMBUS LUHUANUS. *Stromb. testâ conicâ, solidiusculâ, spirâ brevi, inermi, anfractibus lævibus, subradè convolutis, obtusè angulatis, columellâ rectâ, lævi, aperturâ angustâ, labro rix incrassato vel expanso, supernè latè sinuato; albidâ, rufo-fusco variegatâ, columellâ intensè purpureo-nigrâ, aperturæ fauce intensè rufâ.*

THE LUHU STROMBUS. Shell conical, rather solid, spire short, smooth, whorls smooth, somewhat rudely convoluted, obtusely angled, columella straight, smooth, aperture narrow, lip but little thickened or expanded, broadly sinuated at the upper part; whitish, variegated with red-brown, columella intense purple-black, interior of the aperture deep red.

LINNEUS, Syst. Nat. (12th edit.) p. 1209.

Hab. Island of Bohol, Philippines (on sand banks on the reefs); Cuming.

This species is remarkably characterized by the intense purple-black colouring of the columella.

Species 20. (Mus. Saul.)

STROMBUS MAURITIANUS. *Stromb. testâ oblongo-conicâ, solidiusculâ, spirâ subexsertâ, plicato-costatâ, costis in anfractu ultimo evanidis, anfractibus levibus, supernè rotundatis, columellâ rectâ, lævi, labro vix incrassato vel expanso, supernè sinuato; albâ, maculis interruptis aurantio-fuscis fasciatâ, columellâ albâ, aperturæ fauce carneolo-rosaceâ.*

THE MAURITIUS STROMBUS. Shell oblong-conical, rather solid, spire rather exerted, plicately ribbed, ribs disappearing on the last whorl, whorls smooth, rounded at the upper part, columella straight, smooth, lip but little thickened or expanded, sinuated at the upper part; white, banded with interrupted orange-brown blotches, columella white, interior of the aperture flesh-pink.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 699

Strombus cylindricus, Swainson.

Hab. Mauritius.

Constantly distinguished from the preceding species by its more cylindrically conical form and plicately ribbed spire, and by the absence of colour on the columella. The colour of the interior is a paler flesh-pink.



22.



21. c.



21. d.

STROMBUS

PLATE X.

Species 21. (Fig. *a, b, c, d*, Mus. Cuming.)

STROMBUS VARIABILIS. *Stromb. testā ovatā, spirā exsertā, turritā, verrucosā, anfractibus levibus, basi sulcatis, supernè declivibus et angulatis, ad angulum nodosis, columellā callosā, medio tumidiusculā, labro incrassato, subalato, supernè sinuato; albā, aurantio-fusco variè strigati aut fasciatā, columellā maculā purpureā amplā interdum tinctā.*

THE VARIABLE STROMBUS. Shell ovate, spire exserted, turreted, varicose, whorls smooth, grooved at the base, slanting and angled at the upper part, nodose at the angle, columella callous, rather swollen in the middle, lip thickened, slightly winged, sinuated at the upper part; white, variously streaked and banded with orange-brown, columella sometimes stained with a large purple blotch.

SWAINSON, Sowerby Thes. Conch.

Hab. Fig. *a*, Daruley's Island, North Australia; Jukes.

Fig. *b* and *d*, Island of Ticao, Philippines; Cuming.

Fig. *c*, Zanzibar, East Africa; Thorne.

This species has a wide range of habitation and considerable local variety of colouring. It is remarkably constant in form, and is well distinguished by its turreted nodulous spire, slightly ulete expansion of the lip, and swollen callosity of the columella.

Species 22. (Mus. Metcalfe.)

STROMBUS TRICORNIS. *Stromb. testā ovatā, subtrigoniā, spirā conicā, anfractibus spiraliter striatis et liris, supernè concavis et nodoso-tuberculatis, tuberculis tribus dorsalibus peramplis, prominentibus, columellā callosā, labro incrassato, trigono-expanso, supernè in acumen elongatum producto; fluvicante-albā, epidermide crassiusculā indutā, columellā et aperture fauce purpurascente-carnolis.*

THE THREE-HORNED STROMBUS. Shell ovate, somewhat triangular, spire conical, whorls spirally striated and ridged, concave and nodosely tubercled round the upper part, the three dorsal tubercles very large and prominent, columella callous, lip thickened, triangularly expanded, produced above into a point; yellowish-white, covered with a rather thick epidermis, columella and interior of the aperture purplish-flesh.

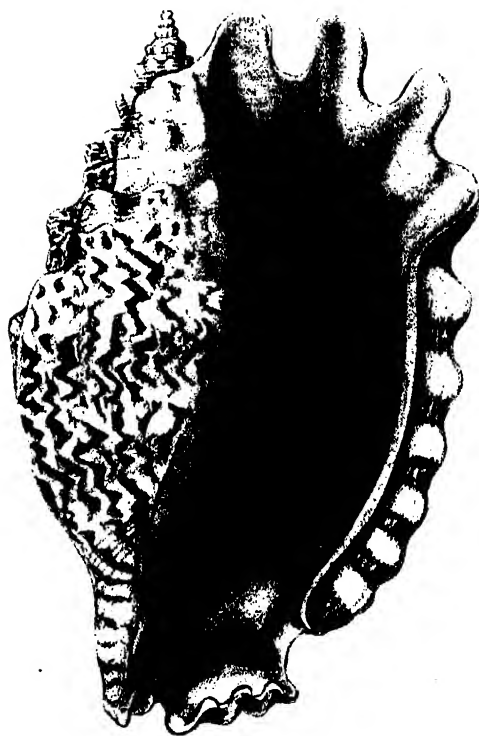
LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 689.

Hab. Red Sea; Metcalfe. West Indies; Lamarck.

The specimen here figured from Mr. Metcalfe's collection was received with several others from the Red Sea, along with *Mugilus*, *Pedum*, and other genera peculiar to that locality, and if the habitat, West Indies, given by Humphreys and Lamarck, be correct, we have a remarkable coincidence of an observation in genus *Olivæ*,—that the only two species inhabiting the Red Sea are identical with two in the West Indies.



23.



25.



24. L.



24. C.

STROMBUS.

PLATE XI.

Species 23. (Mus. Cuming.)

STROMBUS MACULATUS. *Stromb. testā subquadrato-ovalā, crassiusculā, spirā brevi, acutā, subvaricosā, anfractibus spiraliter striatis, supernè gibboso-tumidis, subrudè convolutis, basin versus contractis, columellā et aperturā fauce tenuè corrugatis; albā, rufo-fusco lentiginosā, maculisque nigricantibus interruptè fasciatā, columellā et aperturā fauce albis.*

THE BLOTCHED STROMBUS. Shell somewhat squarely ovate, rather thick, spire short, sharp, slightly varicose, whorls spirally striated, gibbously swollen round the upper part, somewhat rudely convoluted, contracted towards the base, columella and interior of the aperture finely wrinkled; white, freckled with red-brown, and banded in an interrupted manner with blackish blotches, columella and interior of the aperture white.

NUTTALL, Sowerby Thesaurus Conch. p. 30. pl. 7. f. 53.
Hab. Sandwich Islands; Nuttall.

This species is well characterized by the swollen gibbous development of the whorls next the sutures.

Species 24. (Fig. a, b, c, Mus. Cuming.)

STROMBUS URCEUS. *Stromb. testā sulfusiformi-oblongā, spirā exsertā, turrilā, plerumque varicosā, anfractibus spiraliter striatis, basi tenuè sulcatis, supernè declivibus, obtusè angulatis, ad angulum nodoso-tuberculatis, columellā laminatā, partim corrugatā, aperturā oblongā, subangustā, intus densè subtilissimè corrugatā; albidā aut rufescente, griseo-fusco vittatā et variegatā, columellā et aperturā fauce sæpius intensè purpureo-nigricantibus, interdum rufo vel aurantio tinclis.*

THE PITCHER STROMBUS. Shell somewhat fusiformly oblong, spire exserted, turreted, mostly varicose, whorls spirally striated, finely grooved at the base, slanting round the upper part, obtusely angled, nodosely tubercled at the angle, columella laminated, partially wrinkled, aperture oblong, rather narrow,

densely finely wrinkled within; whitish or reddish, filleted and variegated with grey-brown, columella and interior of the aperture generally intense purple-black, sometimes tinged with red or orange.

LINNÆUS, Syst. Nat. (12th edit.) p. 1212.

Canarium ustulatum, Schumacher.

Hab. Island of Ticao, Philippines (on the reefs); Cuming. Australia.

This species may generally be recognized by the dark purple-black colouring of the columella and aperture, which in some specimens is, however, only partially indicated.

Species 25. (Mus. Cuming.)

STROMBUS LACINIATUS. *Stromb. testā ovalā, spirā exsertā et conspicuè nodoso-tuberculatā, anfractibus spiraliter striatis, ultimo fortiter tuberculato, pone labrum radiatim costato, columellā callosā, labro latè dilatato, supernè usque ad apicem producto, peculiariter cristato, latere crassè replicato; albidā, aurantio-fusco pulcherrimè variegatā, aperturā fauce intensè rufo-purpureā.*

THE CRESTED STROMBUS. Shell ovate, with the spire exserted and conspicuously nodosely tubercled, whorls spirally striated, last whorl strongly tubercled, radiately ribbed behind the lip, columella callous, lip broadly dilated, produced at the upper part as far as the spire, peculiarly crested, side thickly folded in; whitish, beautifully variegated with orange-brown, interior of the aperture deep crimson-purple.

CHEMNITZ, Conch. Cab. vol. x. p. 223. pl. 158. f. 1506, 7.
Strombus cristatus, Lamarck.

Hab. Islands of Negros and Ticao, Philippines (in coarse black sand at a depth of about eleven fathoms); Cuming.

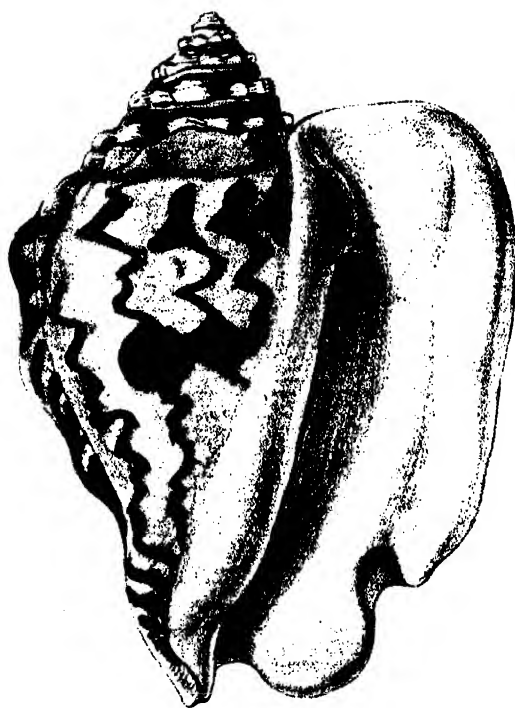
There is little or no variation in the form or colour of this beautiful species, the finely dilated lip being always crested next the apex, while the interior of the aperture is remarkable for its very deep crimson-purple enamel.



26. a.



26. b.



28. a.



28. b.

STROMBUS.

PLATE XII.

Species 26. (Mus. Saul.)

STROMBUS COLUMBA. *Stromb. testā ovatā, subfusiformi, spirā aculē exsertā, turrilatā, apicem versus varicosā, suturis conspicuè marginatis, anfractibus spirāliter striatis, pone labrum radiatim liris, supernè obtusè angulatis, ad angulum plicato-nodatis, columellā callosā, tumidā, corrugatā, labro alato, longitudinaliter plicato, margine incrassato, supra anfractus penultimum producto, aperturæ fauce undique fortiter corrugatā; albidā, aurantio-fusco variegatā et fasciatā, columellā et aperturæ fauce intensè purpureo tinclis.*

THE DOVE STROMBUS. Shell ovate, somewhat fusiform, spire sharply exserted, turreted, varicose towards the apex, sutures conspicuously margined, whorls spirally striated, radiately ridged behind the lip, obtusely angled at the upper part, plicately noded at the angle, columella callous, swollen, wrinkled, lip winged, longitudinally plicated, margin thickened, produced above the penultimate whorl, interior of the aperture strongly wrinkled throughout; whitish, variegated and banded with orange-brown, columella and interior of the aperture stained with purple.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 702.

Strombus Tankervillei, Swainson.

Hab. Zanzibar; Thorne.

Distinguished by its carved turreted spire and richly purple-wrinkled aperture.

Species 27. (Mus. Brit.)

STROMBUS BUBONIUS. *Stromb. testā ovatā, subrudē convolutā, spirā breviusculā, sulcatā et striatā, hic illic varicosā, apice acutā, anfractibus leviusculis, supernè concavis, irregulariter suprā et infrā nodatis, nodis nunc ferè evanidis, nunc fortiter tuberculatis, columellā levigatā, aperturā oblongā, labro vix dilatato; roseo-fuscā, roseo fasciatā, maculis strigisque albis variegatā.*

THE OWL-WINGED STROMBUS. Shell ovate, somewhat rudely convoluted, spire rather short, grooved and striated, here and there varicose, spire sharp, whorls rather smooth, concave round the upper part, irregularly nodose above and below, nodules sometimes

nearly faded, sometimes strongly tubercled, columella smooth, aperture oblong, lip but little dilated; rose-brown, banded with rose, and variegated with white spots and streaks.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 692.

Strombus fasciatus, pars, Gmelin (not of Born).

Eadem var. *Strombus dilatatus*, Lamarck.

Hab. West Indies. Porto Praya, Cape de Verd Islands; Capt. Graves.

This species is remarkable for its variegated rose painting, and for the unequal development of the tubercles.

Species 28. (Mus. Cuming.)

STROMBUS SWAINSONI. *Stromb. testā fusiformi-ovatā, spirā acuminato-turrilatā, anfractibus undique spirāliter striatis, supernè rotundatis et subtilissimè plicatis, plicis in anfractu ultimo subnodosis, anticè evanidis, columellā callosā, tumidiusculā, suprā et infrā corrugatā, labro alato, margine aculē dilatato, supra anfractus penultimum producto, aperturæ fauce peculiariter densè corrugatā; albidā, aurantio-fusco tinclā, zonulis angustis albis subobscurè cingulatā, spirā pallidè rosaceā, columellā albā, aperturæ fauce intensè purpureo lineatā.*

SWAINSON'S STROMBUS. Shell fusiformly ovate, spire acuminate turreted, whorls being spirally striated throughout, rounded at the upper part and very finely plicated, the plaits becoming subnodose on the last whorl, but absent on the front, columella callous, rather swollen, wrinkled above and below, lip winged, edge sharply dilated, produced over the penultimate whorl, interior of the aperture peculiarly thickly wrinkled; whitish, stained with orange-brown, encircled with somewhat obscure narrow white zones, spire tinged with pink, columella white, interior of the aperture lined with dark purple.

Strombus dilatatus, Swainson (not of Lamarck) Zoological Illus. 1820.

Hab. — ?

Distinguished from *S. columba* by the finer plicated sculpture of the spire, sharply dilated lip, and peculiar wrinkling of the aperture.



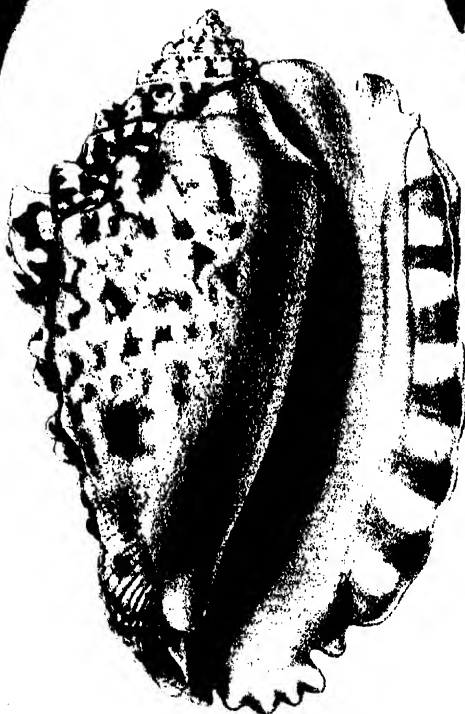
29.



30. a.



30. b.



31.

STROMBUS.

PLATE XIII.

Species 29. (Mus. Saul.)

STROMBUS PAPILLO. *Stromb. testâ ovalâ, spirâ breviusculâ, apice acutâ, anfractibus transversim tenuè liris et striatis, undique papilloso-nodatis, supernè plano-concavis, ad angulum fortiter tuberculatis, columellâ callosâ, lævi, labro spiram versus producto, parum expanso, supernè latè sinuato, aperturæ fauce tenuè corrugulâ; albâ, fusco sparsim lineatâ et maculatâ, columellâ pallidè carneolâ, aperturæ fauce intensè purpureo-nigricante.*

THE BUTTERFLY STROMBUS. Shell ovate, spire rather short, sharp at the apex, whorls transversely finely ridged and striated, papillosely noded throughout, flatly concave round the upper part, strongly tubercled at the angle, columella callous, smooth, lip produced towards the spire, but little expanded, broadly sinuated above, interior of the aperture finely wrinkled; whitish, sparingly lineate and blotched with brown, columella pale earncelon, interior of the aperture purple-black.

CHEMNITZ, Conch. Cab. vol. x. pl. 158. f. 1510, 1511.

Strombus adustus, Swainson.

Hab. Island of Ticao, Philippines (on coral reefs at low water); Cuming.

Very closely allied to *S. lentiginosa* in form, but amply distinguished by its wrinkled and richly-coloured aperture.

Species 30. (Fig. a, b, Mus. Cuning.)

STROMBUS BITUBERCULATUS. *Stromb. testâ conico-ovalâ, basi productâ et recurvâ, spirâ acutâ, varicosâ, anfractibus transversim striatis et liris, pone labrum radiatis, supernè depressiusculis, obsolete nodatis, anfractibus ultimi nodis fortioribus, tuberculis duobus valdè prominentibus, columellâ callosâ, labro expanso, incrassato, in lobum brevem terminato; griseo-albicante, fusco copiosè marmoratâ, aperturæ fauce roseo-linctâ.*

THE TWO-TUBERCLED STROMBUS. Shell conically ovate,

produced and recurved at the base, spire sharp, varicose, whorls transversely striated and ridged, rayed behind the lip, rather depressed round the upper part, obsolete noded, nodules of the last whorl stronger, with two very prominent tubercles, columella callous, lip expanded, thickened, terminated in a short lobe; greyish-white, copiously marbled with brown, interior of the aperture tinged with rose.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 690.

Strombus lobatus, Swainson.

Hab. Island of Granada, West Indies.

The two very prominent tubercles which are formed, prior to the expansion of the mature lip, form a characteristic feature in this species.

Species 31. (Mus. Cuning.)

STROMBUS LENTIGINOSUS. *Stromb. testâ oblongo-ovata, crassiusculâ, spirâ brevi, anfractibus transversim liris et striatis, papilloso-nodatis, supernè depresso-concavis, ad angulum fortiter tuberculatis, columellâ callosâ, labro spiram versus producto, utrinque latè sinuato; albâ, griseo-fusco undique lentiginosâ, aperturæ fauce flavescende.*

THE FRECKLED STROMBUS. Shell oblong-ovate, rather thick, spire short, whorls transversely ridged and striated, papillosely noded, depressly concave round the upper part, strongly tubercled at the angle, columella callous, lip produced towards the spire, broadly sinuated at each end; white, freckled throughout with greyish-brown, interior of the aperture yellowish.

LINNÆUS, Syst. Nat. (Deshayes' edit.) vol. ix. p. 693.

Hab. Island of Luzon, Philippines (on the reefs in shallow water); Cuming.

Distinguished by a light grey freckled pattern upon a yellowish-white ground, which presents little variation. The edge of the lip is faintly tessellated with square brownish blotches.

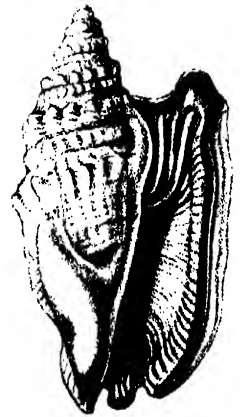
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10

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32. a.



34.



33.



32. b.

STROMBUS.

PLATE XIV.

Species 32. (Fig. *a*, Mus. Cuming, Fig. *b*,
Mus. Belcher.)

STROMBUS GRANULATUS. *Stromb. testā subquadrato-oblongā, spirā exertā, acuminato-turritā, anfractibus transversim striatis, superne concavo-depressis, obtusè angulatis, ad angulum tumidiusculis, et tuberculato-nodosis, anfractu ultimo liris nodatis subirregulariter cingulatis, columellā callosā, labro subexpanso et flexuoso, intus peculiariter granulato; albidā, rufo-fusco marmoratā, columellā carneolā, interdum autem rarè rosceā.*

THE GRANULATED STROMBUS. Shell somewhat squarely oblong, spire exerted, acuminately turreted, whorls transversely striated, concavely depressed round the upper part, obtusely angled, rather swollen and tubercularly noded at the angle, last whorl encircled somewhat irregularly with noded ridges, columella callous, lip slightly expanded and flexuous, peculiarly granulated within; whitish, marbled with reddish-brown, columella carnecolour, sometimes but rarely tinged with pink.

GRAY, Wood Ind. Test. Supp. pl. 4, f. 21.

Hab. St. Helena, and Galapagos Islands (in sandy mud at a depth of from six to eight fathoms); Cuming.

This species is remarkably characterized by the development of a broad cluster of granules on the internal surface of the expanded lip. They are but faintly indicated in the pink-stained variety represented at Fig. 32, *b*.

Species 33. (Mus. Cuming.)

STROMBUS GUTTATUS. *Stromb. testā oblongo-ovalā, basi caldè recurvā, spirā acuminatā, anfractibus lævibus, ad marginem suturalem tenuè nodulatis, deinde concavis, ad angulum tuberculato-nodatis, columellā undique callosā, emarginato supra spiram usque ad apicem effuso, labro subexpanso, incrassato, superne in lobo digitiformi prolongato; carneo-spadicēā, floccis albis undique guttatā, emarginato albo, aperturae faucē intus roseo tinctā.*

THE SPOTTED STROMBUS. Shell oblong-ovate, very much recurved at the base, spire acuminated, whorls smooth, finely noded along the sutural margin, then concave, tubercularly noded at the angle, columella callous throughout, the enamel flowing over

the spire as far as the apex, lip slightly expanded, thickened, prolonged at the upper part into a digitiform lobe; flesh-tinged fawn-colour, spotted throughout with white flakes, enamel white, interior of the aperture stained with deep red.

Pugil guttatus lævis, Martini, Conch. Cab. vol. iii. p. 126. pl. 84. f. 840.

Strombus guttatus, Kiener.

Strombus Auris-Dianæ pars, Linnaeus.

Strombus Auris-Dianæ, Sowerby.

Hab. Island of Burias, Philippines (on the reefs in shallow water); Cuming.

Martini well distinguished this species from the true *S. Auris-Dianæ*, which is roughly ribbed and ridged. The *S. guttatus* is conspicuously characterized by its smooth polished surface of a pinkish-fawn colour, sprinkled with irregular flakes of white; and it is remarkable for its copious deposit of enamel, which flows over the spire even to the apex.

Species 34. (Mus. Cuming.)

STROMBUS AUSTRALIS. *Stromb. testā subquadrato-oblongā, spirā exertā, anfractibus undique transversim nodoso-liratis et striatis, superne nodulis parvis marginatis, deinde concavo-angulatis, nodis ad angulum majoribus, columellā callosā, labro incrassato, expanso, dilatato, superne in lobum obtusè digitiformem prolongato, aperturae faucē conspicuè radiatim corrugato; albidā, labri limbo intus aurantio-rufo tincto.*

THE AUSTRALIAN STROMBUS. Shell somewhat squarely oblong, spire exerted, whorls transversely nodosely ridged and striated, edged at the upper part with small nodules, then concavely angled, the nodules at the angle being larger, columella callous, lip thickened, expanded, dilated, prolonged at the upper part into an obtusely finger-shaped lobe, interior of the aperture conspicuously radiately wrinkled; whitish, edge of the lip stained with orange-red.

SOWERBY, Thesaurus Conch. p. 36. pl. 9. f. 96, 97.

Hab. Australia.

This species, which is distinctly characterized as well in form as in the strong radiating wrinkled sculpture of the aperture, is doubtless richly marked in fine condition.





35.



36. b.

fig.



36. a.



37.

STROMBUS.

PLATE XV.

Species 35. (Mus. Cuming.)

STROMBUS NOVE-ZELANDIÆ. *Stromb. testâ oblongo-ovalâ, basi recurvâ, spirâ acuminato-turritâ, anfractibus supernè depresso-concavis, deinde acutè tuberculato-nodatis, infra nodis transversim liris, columellâ callosâ, labro expanso, subdilato, supernè lobo digitiformi terminato, aperturæ fauce undique radiatim fortiter corrugato-sulcatâ; albidâ, spadiceo-fusco variè. pictâ, strigatâ et marmoratâ, columellâ albidâ, maculâ castaneâ amplâ tinctâ, aperturæ fauce intensè aurantiâ, liris albidis.*

THE NEW ZEALAND STROMBUS. Shell oblong-ovate, recurved at the base, spire acuminately turreted, whorls depressly concave round the upper part, then sharply tubercularly noded, transversely ridged beneath the nodules, columella callous, lip expanded, somewhat dilated, terminated at the upper part with a finger-shaped lobe, interior of the aperture strongly radiately grooved and wrinkled; whitish, variously painted, streaked and marbled with fawn-brown, columella whitish, stained with a large chestnut blotch, interior of the aperture deep orange, ridges whitish.

CHEMNITZ, Conch. Cab. vol. 10. pl. 156. f. 1485-6.

Strombus pacificus, Swainson.

Hab. New Zealand.

This species is remarkably distinguished by its richly rayed aperture and by the large chestnut blotch upon the columella. The locality "shores of Peru" given by Kiener and Deshayes is not likely to be correct.

Mr. Swainson has too frequently overlooked the important 'Couchylien Cabinet' of Martini and Chemnitz, by whom he is anticipated in several of his species.

Species 36. (Fig. 36 a, 36 b, and 37, Mus. Cuming.)

STROMBUS AURIS-DIANÆ. *Stromb. testâ oblongo-ovalâ, basi recurvâ, spirâ acuminato-turritâ, anfractibus rugosè et creberrimè liris, liris pone labrum radiatis, hic illic nodatis, anfractuum parte superiori marginato, concavo, deinde tuberculato-nodato, columellâ valdè callosâ, labro expanso, supernè lobo digitiformi terminato, limbo incrassato, aperturæ fauce supernè leviter corrugatâ; albidâ, fusco articulatâ et marmoratâ, pone labrum nigro aut fusco tessellatâ, columellâ albâ vel adustâ, aperturæ fauce vel carneolâ, vel intensè rosâ, lobo interdum adusto-nigricante.*

THE DIANA'S EAR STROMBUS. Shell oblong-ovate, recurved at the base, spire acuminately turreted, whorls roughly and very closely ridged, ridges rayed behind the lip, here and there noded, upper part of the whorls margined, concave, then tubercularly noded, columella very callous, lip expanded, terminated at the upper part in a finger-shaped lobe, edge of the lip thickened, interior of the aperture slightly wrinkled at the upper part; whitish, articulated and marbled with brown, tessellated with black or brown behind the lip, columella white or chestnut-brown, interior of the aperture carnelion, or very deep pink, lobe sometimes adust-black.

LINNÆUS, Syst. Nat. (12th edit.) p. 1209.

Eadem var. *Strombus melanostomus*, Swainson.

Hab. Malayan Peninsula (in sandy mud at the depth of four fathoms) and Philippine Islands (on coral reefs at low water); Cuming.

I quite agree with M. Deshayes that the three shells here figured are varieties of one and the same species. They differ in the colouring of the aperture, but there is no difference of form or sculpture.

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38.



39.



40. a.



40. b.

STROMBUS.

PLATE XVI.

Species 38. (Mus. Cuming.)

STROMBUS GRACILIOR. *Stromb. testâ ovato-conicâ, subfusiformi, spirâ acuminatâ, anfractibus lævibus, basi leviter sulcatis, rudè et subirregulariter convolutis, supernè concavo-declivibus, deinde nodatis, nodis parvis, subacutis, columellâ callosâ, labro subalato, aperturæ fauce prope labrum obsoletè corrugatâ; pallidè rufescente-aurantiâ, labri limbo rufescente, aperturæ fauce albâ.*

THE MORE SLENDER STROMBUS. Shell ovately conical, somewhat fusiform, spire acuminate, whorls smooth, slightly grooved at the base, rudely and somewhat irregularly convoluted, concavely slanting round the upper part, then noded, nodules small and rather sharp, columella callous, lip slightly winged, interior of the aperture obsoletely wrinkled near the lip; pale reddish-orange, edge of the lip tinged with red, interior of the aperture white.

SOWERBY, Tankerville Catalogue, App. p. xx.

Hab. St. Elena and Panama, Central America (in sandy mud at a depth of from six to twelve fathoms); Cuming.

This species is constantly distinguished from the following by its rude convolution and comparatively obsolete nodules.

Species 39. (Mus. Cuming.)

STROMBUS PUGILIS. *Stromb. testâ ovato-conicâ, subobesâ, spirâ acuminatâ, anfractibus lævibus, basi et apicem versus sulcatis, supernè concavis, ad angulum fortiter spinoso-nodatis, columellâ callosâ, labro subalato, aperturæ fauce prope labrum interdum obscurè corrugatâ; aurantio-rufâ, columellâ et aperturæ fauce intensè carneolo-rufis.*

THE ARMED STROMBUS. Shell ovately conical, rather

obtuse, spire acuminate, whorls smooth, grooved at the base and towards the apex, concave round the upper part, strongly spinose-noded at the angle, columella callous, lip slightly winged, interior of the aperture sometimes obscurely wrinkled near the lip; orange-red, columella and interior of the aperture deep carnation-red.

LINNEUS, Syst. Nat. (12th edit.) p. 1209.

Hab. West Indies and Gulf of Mexico.

Chiefly remarkable for the strong spine-like character of the nodules.

Species 40. (Mus. Cuming.)

STROMBUS ALATUS. *Stromb. testâ ovato-conicâ, subobesâ, spirâ acuminatâ, anfractibus lævibus, basi et apicem versus conspicuè sulcatis, supernè concavis, ad angulum nodatis, nodis parvisculis, columellâ valdè callosâ, labro alato, aperturæ fauce labrum versus corrugatâ; castaneo-fuscâ, columellâ et aperturæ fauce intensè nigricante-castaneis, interdum carneolo-rufis.*

THE WINGED STROMBUS. Shell ovately conical, rather stout, spire acuminate, whorls smooth, conspicuously grooved at the base and towards the apex, concave round the upper part, noded at the angle, nodules rather small, columella very callous, lip winged, interior of the aperture wrinkled towards the lip; chestnut-brown, columella and interior of the aperture deep blackish-chestnut, sometimes carnation-red.

GIMELIN, Syst. Nat. p. 3513.

Strombus pyrulatus, Lamarck.

Hab. Gulf of Mexico.

It is extremely doubtful whether this is a distinct species from the preceding. The nodules are not so prominent, and the spire is generally more strongly grooved.



42.



41. a.



43.



44. a.



45.



41. b.



42. b.

STROMBUS.

PLATE XVII.

Species 41. (Fig. *a*, *b*, Mus. Cuming.)

STROMBUS ELEGANS. *Stromb. testā fusiformi-turrilatā, spirā exsertā, anfractibus transversim tenuilatis, superne latè angulatā, ad angulum plicato-nodatis, costā tumidā flexuosā pone labrum, columellā crassè laminatā, supra et infra corrugatā, aperturā subcontractā, fauce dense corrugatā; albida, rufo-fusco fasciatā et punctatā, columellā et aperturæ fauce purpureis vel intense rufis.*

THE ELEGANT STROMBUS. Shell fusiformly turreted, spire exserted, whorls transversely finely ridged, broadly angled at the upper part, plicately noded at the angle, with a swollen flexuous rib behind the lip, columella thickly laminated, wrinkled above and below, aperture somewhat contracted, interior densely wrinkled; whitish, banded and dotted with red-brown, columella and interior of the aperture purple or deep red.

SOWERBY, Thesaurus Conch. p. 30. pl. 7. f. 43 and 48.

Hab. Red Sea; Ruppell. Philippine Islands (In coarse sand at the depth of eight fathoms); Cuming.

Very closely allied to *S. rugosus*, from which it differs in being of a more fusiform turreted shape.

Species 42. (Mus. Cuming.)

STROMBUS JAPONICUS. *Stromb. testā fusiformi-turrilatā, spirā valdè exsertā, anfractibus undique creberrimè et regulariter sulcatis, superne declivi-concavis, ad angulum subobscurè plicato-nodatis, apicem versus longitudinaliter lennicostatis, columellā callosā, laminatā, labro alato, intus conspicuè radiatim corrugato; albā, rufo-fusco lineatā et variegatā, zonulis albis, maculis sagittariis interruptis, cingulatā, columellā et aperturæ fauce eburneis.*

THE JAPAN STROMBUS. Shell fusiformly turreted, spire much exserted, whorls transversely very closely and regularly grooved throughout, slantingly concave round the upper part, somewhat obscurely plicately noded at the angle, longitudinally finely ribbed towards the apex, columella callous, laminated, lip winged, conspicuously radiately wrinkled within; white, stained and variegated with red-brown, encircled with narrow white zones, interrupted with arrow-headed markings, columella and interior of the aperture ivory-white.

Hab. Japan.

This species is certainly distinct from *S. vittatus* and *Campbelli*, chiefly in the slanting concavity of the upper portion of the whorls and in their close transverse grooving.

Species 43. (Mus. Cuming.)

STROMBUS SUCCINCTUS. *Stromb. testā oblongo-ovata, sub-fusiformi, spirā acuminatā, apice acutā, anfractibus laevibus, superne declivibus, anfractu ultimo obsolete rudè tuberculato, labro alato, ad spiram producto, columellā callosā, aperturā subangustā, superne conspicuè canaliculatā, fauce radiatim corrugatā; fulco-spadiacea, fusco eximie lentiginosa, zonulis albis, maculis sagittariis interruptis, cingulatā, columellā et aperturæ fauce eburneis.*

THE GIRDLED STROMBUS. Shell oblong-ovate, somewhat fusiform, spire acuminate, apex sharp, whorls smooth, slanting round the upper part, last whorl obsolete rudely tubercled, lip winged, produced upon the spire, columella callous, aperture rather narrow, conspicuously channelled at the upper part, interior radiately wrinkled; fulvous fawn-colour, delicately freckled with brown, encircled with white zones, interrupted with arrow-headed marks, columella and interior of the aperture ivory-white.

LINNEUS, Syst. Nat. (12th edit.) p. 1212.

Strombus acinrtus, Born.

Hab. Island of Masbate, Philippines (on the reefs at low water); Cuming.

Chiefly characterized by the channelled growth of the lip upon the spire, and the slanting form of the whorls round the upper part.

Species 44. (Fig. *a*, Mus. Cuming;

Fig. *b*, Mus. Saul.)

STROMBUS VITTATUS. *Stromb. testā elongato-turrilatā, basi conspicuè sulcatā, anfractibus aut laevibus aut transversim tenuistriatis, longitudinaliter subtiliter costatis, superne marginalis et depressa, anfractu ultimo tantum lævigato, columellā callosā, labro alato, intus obscurè corrugato, ad anfractum penultimum producto; rufo-fusco, vittis hic illic interrupto, lineatā et variegatā, columellā et aperturæ fauce nixis.*

THE RIBAND-MARKED STROMBUS. Shell elongately turreted, conspicuously grooved at the base, whorls either smooth or transversely finely striated, longitudinally finely ribbed, margined and depressed round the upper part, last whorl smooth, columella callous, lip winged, rather obscurely wrinkled within, produced upon the last whorl but one; white, stained and variegated with red-brown, interrupted here and there with ribands, columella and interior of the aperture white.

LINNÆUS, Syst. Nat. (12th edit.) p. 1211.

Eadem var. *Strombus turritus*, Lamarck.

Hab. Philippine Islands; Cuming.

This species varies chiefly in being more or less sculptured: in some specimens nearly the entire shell is smooth, while in others it is elaborately ribbed and grooved.

Species 45. (Mus. Cuning.)

STROMBUS CAMPBELLI. *Stromb. testâ fusiformi-turritâ*,

spirâ valdè exsertâ, anfractibus lævibus, basi conspicuè sulcatis, apicem versus costatis, supernè latimarginatis, margine plicato-costato, anfractu ultimo dorso rudè gibboso, columellâ callosâ, labro alato; albidâ, rufofusco undique lentiginosâ et fasciatâ, columellâ et apertura fauce eburneis.

CAMPBELL'S STROMBUS. Shell fusiformly turreted, spire very much exerted, whorls smooth, conspicuously grooved at the base, ribbed towards the apex, broadly margined round the upper part, margin plicately ribbed, last whorl rudely gibbous at the back, columella callous, lip winged; whitish, freckled and banded throughout with reddish-brown, columella and interior of the aperture ivory-white.

GRAY, Griffith's Cuvier Anim. Kingdon, Moll. pl. 25.

Hab. Sandy Cape, North Australia; Jukes.

Independently of its shorter and more rudely gibbous form, this species differs from *S. villatus* in having the margined summit of the whorls ribbed, whilst below this they are smooth.

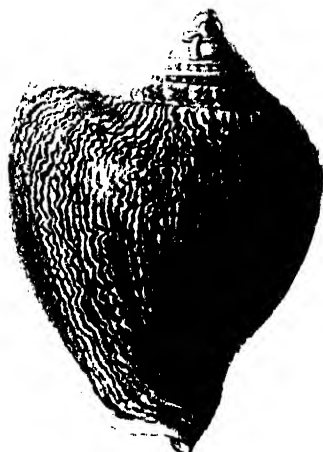




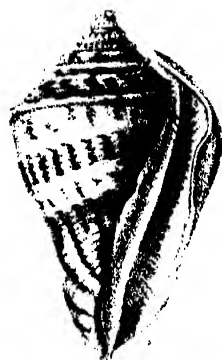
46. a.



48.



46. b



49.



51.



50.

STROMBUS.

PLATE XVIII.

Species 46. (Fig. a, b, Mus. Cuming.)

STROMBUS CANARIUM. *Stromb. testâ abbreviato-ovatâ, subtrigonâ, obesâ, ponderosâ, spirâ parvisculâ, acutâ, varicosâ, anfractibus lævibus, gibbosis, apicem versus sulcatis, columellâ valdè callosâ, labro alato, incrassato; albâ aut fulvescente, lineis fuscis irregulariter flexuosis undique densè longitudinaliter pictâ, columellâ et apertura fauce eburneis.*

THE PARTRIDGE-WING STROMBUS. Shell shortly ovate, somewhat triangular, stout, heavy, spire rather small, sharp, varicose, whorls smooth, gibbous, grooved towards the apex, columella very callous, lip winged, thickened; whitish or fulvous, densely longitudinally painted throughout with irregularly flexuous brown lines, columella and interior of the aperture ivory-white.

LINNEUS, Syst. Nat. (12th edit.) p. 1211.

Eadem var. *Strombus Panicensis*, Quoy.

Hab. Ceylon and Philippine Islands; Cuming.

A small species of solid growth, in which there is no indication of any sculpture except towards the apex.

Species 47. (Mus. Saul.)

STROMBUS MINIMUS. *Stromb. testâ ovatâ, spirâ acuminatâ, apicem versus varicosâ, anfractibus lævibus, superne tenuimarginatis, deinde angulatis, ad angulum plicatodulatis, columellâ valdè callosâ, callositate ad spiram productâ, labro alato, ad spiram calloso-producto; spadiceo-fuscâ, columellâ albâ, apertura fauce crocâ.*

THE SMALL STROMBUS. Shell ovate, spire acuminate, varicose towards the apex, whorls smooth, finely margined round the upper part, then angled, plicately noded at the angle, columella very callous, callosity produced at the spire, lip winged, callously produced on the spire; fawn-brown, columella white, interior of the aperture tinged with saffron.

LINNEUS, Mantissa, p. 549.

Strombus troglodytes, Lamarck.

Hab. Island of Ticao, Philippines (on the reefs); Cuming.

This little species is chiefly distinguished by the callosities formed on the spire at the junction of the lip with the body-whorl, and by the saffron tinge of colouring within the aperture.

Species 48. (Mus. Cuming.)

STROMBUS SIBBALDII. *Stromb. testâ abbreviato-ovatâ, obesâ, spirâ peculiariter acuminato-turritâ, apicem versus varicosâ et costatâ, anfractibus gibbosis, transversim sulcatis, superne concavo-angulatis, ad angulum profusè nodulatis, columellâ callosâ et corrugatâ, basi truncatâ, labro alato, intus radiatim corrugato; pallidè spadiceâ, villis lentiginosis cingulatâ, rugis columellæ partim intensè purpureis, apertura fauce albâ.*

SIBBALD'S STROMBUS. Shell abbreviately ovate, stout, spire peculiarly abbreviately turreted, varicose and ribbed towards the apex, whorls gibbous, transversely grooved, concavely angled round the upper part, profusely noded at the angle, columella callous and wrinkled, truncated at the base, lip winged, radiately wrinkled within; light fawn-colour, encircled with freckled ribands, wrinkles of the columella partially coloured with deep purple, interior of the aperture white.

SOWERBY, Thesaurus Conch. p. 28. f. 10, 11.

Hab. Ceylon.

The form of this species is very peculiar, being short and gibbous with the spire singularly elevated, while the columellar wrinkles are characteristically stained with deep purple.

Species 49. (Mus. Cuming.)

STROMBUS MARGINATUS. *Stromb. testâ ovato-conicâ, spirâ brevi, subdepressâ, apice acutâ, anfractibus lævibus, basin versus sulcatis, inferne contractis, superne tumidis, depresso-angulatis, ad angulum peculiariter marginatis, margine prope apicem subtilissimè nodulato, columellâ callosâ, laminatâ, aperturâ angustâ, superne ematiculatâ, labro ad spiram producto, intus obscurè corrugato; rufo-spadiceâ, villis lentiginosis cingulatâ, columellâ et apertura fauce albis.*

THE MARGINED STROMBUS. Shell ovately conical, spire short, rather depressed, sharp at the apex, whorls smooth, grooved towards the base, contracted at the lower part, swollen and depressly angled above, peculiarly margined at the angle, margin very finely noded near the apex, columella callous, laminated, aperture narrow, channelled at the upper part, lip produced upon the spire, obscurely wrinkled within;

reddish-fawn, encircled with freckled ribands, columella and interior of the aperture white.

LINNÆUS, Syst. Nat. (12th edit.) p. 1209.

Hab. Philippine Islands; Cuming.

As in many other instances, it is not possible to decide whether the shell which Lamarck and others refer to the Linnæan species is the correct type. The diagnoses of the 'Systema Naturæ' are often too brief to fix the identity of the species, which is not unfrequently illustrated by reference to two or more figures of different specific character. *S. marginatus*, though differing so materially in form, has very much the appearance of a longitudinally compressed variety of *S. succinctus*.

Species 50. (Mus. Saul.)

STROMBUS LABIOSUS. *Stromb. testâ subtrigono-ovatâ, basi attenuatâ et subcontortâ, spirâ acuminatâ, anfractibus transversim creberrimè sulcatis, supernè obtusè angulatis, ad angulum profusè plicato-nodatis, columellâ valdè callosâ, labro conspicuè alato, incrassato; fulvo-spaldicâ, columellâ et aperturæ fauce eburneis.*

THE FULL-LIPPED STROMBUS. Shell somewhat triangularly ovate, attenuated and slightly twisted at the base, spire acuminate, whorls transversely very closely grooved, obtusely angled round the upper part, profusely plicately noded at the angle, columella very callous, lip conspicuously winged, thickened; fulvous-fawn, columella and interior of the aperture ivory-white.

GRAY, Wood Index Test. Supp. pl. 4.

Hab. Cagayan, Island of Mindanao, Philippines (in sandy mud at the depth of twenty-five fathoms); Cuming.

The detail of sculpture in this species is very similar to that in *S. minimus*.

Species 51. (Mus. Cuming.)

STROMBUS ISABELLA. *Stromb. testâ subtrigono-ovatâ, spirâ brevi, apice acutâ, anfractibus lævibus, basi sulcatis, supernè rotundatis, prope apicem sulcatis et varicosis, columellâ callosâ, labro subalato, simplici; sordidè fulvo-fuscâ, immaculatâ, interdum autem rariè fasciatâ, columellâ et aperturæ fauce albis.*

THE ISABELLA STROMBUS. Shell somewhat triangularly ovate, spire short, sharp at the apex, whorls smooth, grooved at the base, rounded at the upper part, grooved and varicose near the apex, columella callous, lip slightly winged, simple; dirty fulvous brown, unspotted, sometimes, but rarely, banded, columella and interior of the aperture white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 700.

Eadem var. *Strombus leniatus*, Quoy.

Hab. Philippine Islands (on the reefs at low water); Cuming.

Notwithstanding the similarity of form between this species and *S. canarium*, there can be little doubt of their being distinct. The shell is not so thick in substance, and there is a marked difference in the growth of the lip, the most characteristic part of the shell in *Strombus*.





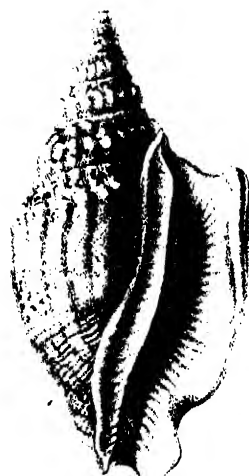
53. a.



53. b.



53. a.



53. b.

STROMBUS.

PLATE XIX.

Species 52. (Mus. Cuning.)

STROMBUS PULCHELLUS. *Stromb. testā subquadrato-ovalā, spirā acuminato-turritā, anfractibus radialim sulcatis, supernè rotundatis, creberrimè nodoso-plicatis, apicem versus conspicuè varicosis, anfractu ultimo costā tumidā pone labrum, columellā callosā, labro alato, intus fortiter radiatim corrugato; albidā, rufescente-spadiceo fasciatā et lentiginosā, columellā parte superiori et aperturā fauce intensè purpureis.*

THE PRETTY STROMBUS. Shell somewhat squarely ovate, spire acuminately turreted, whorls radiately grooved, rounded at the upper part, very closely nodosely plaited, conspicuously varicose towards the apex, last whorl with a swollen rib behind the lip, columella callous, lip winged, strongly radiately wrinkled within; whitish, banded and freckled with reddish-fawn, upper part of the columella and interior of the aperture deep purple.

Hab. Island of Ticao, Philippines (on the reefs); Cuning.

This little species appears to be distinct from all the known varieties, and there are many, of *S. labiosus*, to which it is nearest allied.

Species 53. (Fig. a, b, Mus. Cuning.)

STROMBUS SAMARENSIS. *Stromb. testā fusiformi-oblongā, basi prolongatā, recurvā, Terebelliformi, solidiusculā, spirā acuminatā, apicem versus varicosā, anfractibus levibus, politis, supernè plicato-costatis, costis plus minus obsoletis, columellā densè callosā, aperturā parvā, fauce profusè corrugatā, labro fortiter tridentato; albā, rufo-fusco tinctā et nebulatā, columellā albā, aperturā fauce intensè purpureā, rugis albis.*

THE SAMAR STROMBUS. Shell fusiformly oblong, prolonged and recurved at the base, Terebellum-shaped, rather solid, spire acuminate, varicose towards the apex, whorls smooth, polished, plicately ribbed round the upper part, ribs more or less obsolete, columella thickly callous, aperture small, interior profusely wrinkled, lip strongly three-toothed; white, stained and clouded with red-brown, columella white, interior of the aperture deep purple, with the wrinkles white.

Strombus Samar, Chemnitz, Conch. Cab. vol. x. p. 221. pl. 157. f. 1503.

Strombus tridentatus, Lamarek.

Strombus dentatus, Sowerby (not of Linnæus).

Hab. Philippine Islands; Cuning.

This species was not known to Linnæus, having been first described and figured in the tenth volume of the 'Conchylien Cabinet,' where Chemnitz distinguished it by the name of its habitat, one of the Philippine Islands.

Species 54. (Mus. Cuning.)

STROMBUS EPIDROMIS. *Stromb. testā ovalā, spirā breviusculā, apicē acutā, anfractibus levibus, supernè declivibus, viz angulatis, ad angulum profusè nodulatis, columellā callosā, labro subampliter plano-expanso, rotundato; albā, rufescente-spadiceo lentiginosā, columellā et aperturā fauce eburneis.*

THE SAIL STROMBUS. Shell ovate, spire rather short, sharp at the apex, whorls smooth, slanting round the upper part, slightly angled, profusely noduled at the angle, columella callous, lip rather largely flatly expanded, rounded; white, freckled with reddish-fawn, columella and interior of the aperture ivory-white.

LINNÆUS, Syst. Nat. (12th edit.) p. 1211.

Hab. Island of Ticao, Philippines (on the reefs); Cuning.

Well characterized by its flatly expanded rounded lip, which stands out from the body of the shell like a spreading sail.

Species 55. (Mus. Brit.)

STROMBUS DEFORMIS. *Stromb. testā subfusiformi-ovalā, spirā acuminato-turritā, apicē acutā, anfractibus transversim undique creberrimè sulcatis, supernè declivibus, ad angulum plicato-nodatis, nodis anticè in costis descendētib, columellā callosā, undique fortiter corrugatā, labro alato, expanso, intus fortiter corrugato; albidā, rufo-fusco punctatā et fasciatā, columellā et aperturā fauce albis.*

THE DEFORMED STROMBUS. Shell somewhat fusiformly ovate, spire acuminately turreted, sharp at the apex, whorls transversely very closely grooved throughout, slanting round the upper part, plicately noduled at the angle, nodules descending in front into ribs, columella callous, strongly wrinkled throughout, lip

winged, expanded, strongly wrinkled within; whitish, dotted and banded with reddish-brown, columella and interior of the aperture white.

GRAY, Griffith's Cuv. Anim. Kingdom, Moll. pl. 25.

Hab. Australia.

The form of this species is characteristic, and the wrinkled sculpture of the aperture and columella is larger and stronger than usual.

Species 56. (Mus. Saul.)

STROMBUS FASCIATUS. *Stromb. testâ ovato-conicâ, spirâ brevi, apice acutâ, anfractibus lævibus, supernè concavo-declivibus, deinde tuberculatis, columellâ lævigatâ, aperturâ oblongâ, subangustâ, labro simplici, supernè sinuato; albidâ, rufescente-fusco subtilissimè lentiginosâ, maculis nigris sagittariis fasciatâ, columellâ et aperturæ fauce croceis.*

THE BANDED STROMBUS. Shell ovate, conical, spire short, sharp at the apex, whorls smooth, concavely slanting round the upper part, then tubercled, columella smooth, aperture oblong, rather narrow, lip simple, sinuated at the upper part; whitish, very delicately freckled with reddish-brown, and banded with rows of arrow-headed black spots, columella and interior of the aperture saffron-yellow.

BORN, Mus. Vind. p. 278.

Strombus subulatus, Herbst.

Strombus polyfasciatus, Chemnitz.

Strombus lineatus, Lamarck.

Strombus Persicus, Swainson.

Hab. Red Sea.

Very distinct from all other species of the genus, especially in its peculiarity of colouring.

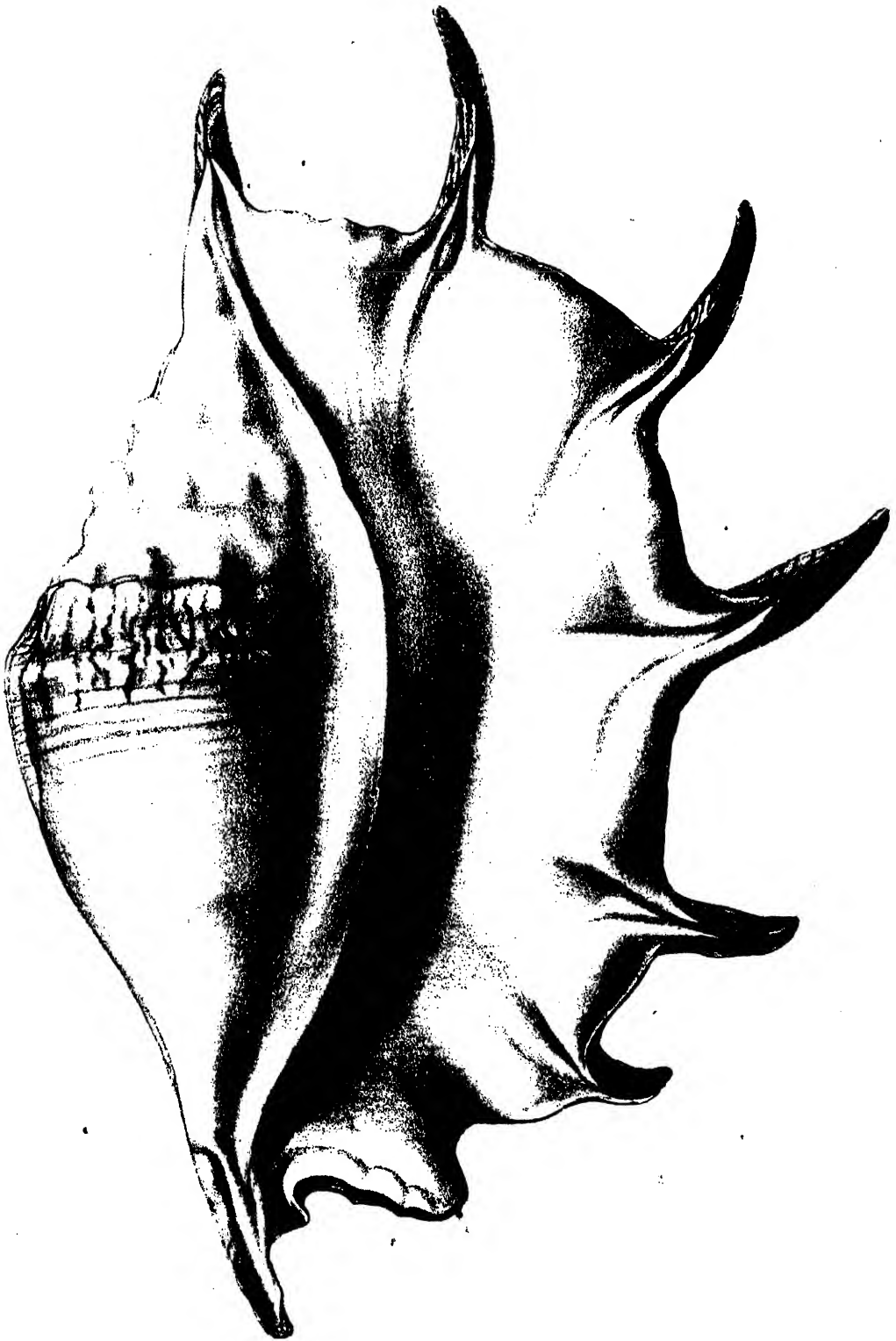
STROMBUS.

	Plate.	Species.		Plate.	Species.
<i>accinctus</i> , Born	XVII.	43	<i>labiosus</i> , Gray	XVIII.	50
<i>accipitrinus</i> , Lamarck ✓	VII.	12	<i>lacinatus</i> , Chemnitz	XI.	25
<i>adustus</i> , Swainson	XIII.	29	<i>latissimus</i> , Linnæus	IV.	4
<i>alatus</i> , Gmelin ✓	XVI.	40	<i>lentiginosus</i> , Linnæus	XIII.	31
<i>auris-Dianæ</i> , Linnæus ✓	XV.	36	<i>lineatus</i> , Lamarck	XIX.	56
<i>auris-Dianæ</i> , Sowerby	XIV.	33	<i>lobatus</i> , Swainson	XIII.	30
<i>Australis</i> , Sowerby ✓	XIV.	34	<i>Incifer</i> , Linnæus	II.	2
<i>bituberculatus</i> , Lamarck	XIII.	30	<i>Luhuanus</i> , Linnæus	IX.	19
<i>bubonius</i> , Lamarck ✓	XII.	27	<i>maculatus</i> , Nuttall	XI.	23
<i>bulbulus</i> , Sowerby ✓	VI.	8	<i>marginatus</i> , Linnæus	XVIII.	49
<i>canarius</i> , Linnæus ✓	XVIII.	46	<i>Mauritanus</i> , Lamarck	IX.	20
<i>Campbelli</i> , Gray ✓	XVII.	45	<i>melanostomus</i> , Swainson	XV.	36
<i>columba</i> , Lamarck ✓	XII.	26	<i>minimus</i> , Linnæus	XVIII.	47
<i>corrugatus</i> , Adams & Reeve ..	IX.	16	<i>mutabilis</i> , Swainson	VII.	11
<i>costatus</i> , Gmelin ✓	VII.	12	<i>Novæ-Zelandiæ</i> , Chemnitz	XV.	35
<i>crenatus</i> , Sowerby	III.	3	<i>pacificus</i> , Swainson	XV.	35
<i>cristatus</i> , Lamarck	XI.	25	<i>papilio</i> , Chemnitz	XIII.	29
<i>cylindricus</i> , Swainson	IX.	20	<i>Persicus</i> , Swainson	XIX.	56
<i>deformis</i> , Gray	XIX.	55	<i>Peruvianus</i> , Swainson	V.	6
<i>dentatus</i> , Linnæus	IX.	17	<i>plicatus</i> , Lamarck	IX.	17
<i>dentatus</i> , Sowerby	XIX.	53	<i>polyfasciatus</i> , Chemnitz	XIX.	56
<i>dilatatus</i> , Lamarck	XII.	27	<i>pugilis</i> , Linnæus	XVI.	39
<i>dilatatus</i> , Swainson	XII.	28	<i>pulchellus</i> , Reeve	XIX.	52
<i>elegans</i> , Sowerby	XVII.	41	<i>pyrulatus</i> , Lamarck ✓	XVI.	40
<i>epidromis</i> , Linnæus	XIX.	54	<i>rugosus</i> , Sowerby	IX.	16
<i>fasciatus</i> , Born	XIX.	56	<i>Ruppellii</i> , Reeve	VIII.	13
<i>fasciatus</i> , Gmelin ✓	XII.	27	<i>Samarensis</i> , Chemnitz	XIX.	53
<i>floridus</i> , Lamarck	VII.	11	<i>Sibbaldii</i> , Sowerby	XVIII.	48
<i>fusiformis</i> , Sowerby	V.	7	<i>subulatus</i> , Herbst	XIX.	56
<i>galea</i> , Wood	III.	3	<i>succinctus</i> , Linnæus	XVII.	43
<i>galeatus</i> , Swainson	III.	3	<i>Swainsoni</i> , Reeve	XII.	28
<i>gallus</i> , Linnæus	IX.	18	<i>teniatus</i> , Quoy	XVIII.	51
<i>gibberulus</i> , Linnæus	VIII.	16	<i>Tankervillei</i> , Swainson	XII.	26
<i>gigas</i> , Linnæus	II.	2	<i>terebellatus</i> , Sowerby	VI.	10
<i>Goliath</i> , Chemnitz	I.	1	<i>Thersites</i> , Gray ..	VI.	9
<i>gracilior</i> , Sowerby	XVI.	38	<i>tricornis</i> , Lamarck	X.	22
<i>granulatus</i> , Gray	XIV.	32	<i>tridentatus</i> , Lamarck	XIX.	53
<i>guttatus</i> , Kiener	XIV.	33	<i>trogodytes</i> , Lamarck	XVIII.	47
<i>hæmastoma</i> , Sowerby	V.	5	<i>turritus</i> , Lamarck	XVII.	44
<i>Helli</i> , Rousseau	V.	5	<i>urceus</i> , Linnæus	XI.	24
<i>inermis</i> , Swainson ✓	VII.	12	<i>Vanikorensis</i> , Quoy ✓	XVIII.	46
<i>Isabella</i> , Lamarck	XVIII.	51	<i>variabilis</i> , Swainson	X.	21
<i>Japonicus</i> , Reeve	XVII.	42	<i>vittatus</i> , Linnæus	XVII.	44

MONOGRAPH
OF THE GENUS
P T E R O C E R A.

What bear ye now, ye dancing waves,
In your wild delirious play ?
Sea-weeds or shells, from the coral caves,
Where the flocks of ocean stray ? *Miss Roberts.*





PTEROCERA.

PLATE I.

Genus PTEROCERA, Lamarck.

Testa ovato-oblonga, ventricosa, spirâ plus minus acuminatâ, anfractu ultimo valdè majore, labro in alam digitatam ampliter expanso, basi in canalem digitatam producto, columellâ et aperturæ fauce interdum levigatis, interdum densè corrugatis. Operculum corneum, crassum, oblongum, acuminatum.

Shell ovately oblong, ventricose, spire more or less acuminate, last whorl much larger, with the lip largely expanded into a clawed wing, base produced into a clawed canal, columella and interior of the aperture sometimes smooth, sometimes densely wrinkled. Operculum horny, thick, oblong, acuminate.

The ten characteristic forms which have been associated under the head of *Pterocera*, are mainly distinguished by the outer lip being widely expanded over the summit of the spire, and developed into a number of spreading claws. The sculpture and even the colouring of the whorls about the spire is very similar in all. The typical varieties of character in the different species reside in the clawed lip, and in the columella and interior of the aperture, which are often brilliantly coloured. In *P. chiragra* and *rugosa* the lip is expanded into six widely spreading claws, the columella and aperture being smooth in the first-named species, and wrinkled in the second. In *P. bryonia*, *lambis*, and *aurantiaca*, there are seven claws, and the columella and aperture are smooth. In *P. scorpius* and *pseudo-scorpio*, with seven claws, the columella and aperture are densely wrinkled, and the claws are nodose. In *P. elongata* and *millepeda* with ten, and in *P. multipes* with eleven claws, the columella and aperture of all three are densely wrinkled.

No representative of this genus has been found in any part of the American coast. *P. rugosa* and *bryonia* were collected by Mr. Cuming at the Society Islands; the rest are from the Eastern Seas.

Species 1. (Mus. Cuming.)

PTEROCERA BRYONIA. *Pter. testâ ovato-oblongâ, spirâ nunc acuminatâ, nunc truncatâ, anfractibus subtiliter striatis, superne concavis, ad angulum fortiter nodatis, anfractu ultimo labro latissimè expanso, heptadactylo, columellâ callosâ, levi, aperturæ fauce levi; albidâ, fuscescente vix tinctâ, columellâ et aperturæ fauce albidâ-carneis.*

THE WILD-VINE ROOT PTEROCERA. Shell ovately oblong, spire sometimes acuminate, sometimes truncated, whorls finely striated, concave round the upper part, strongly noded at the angle, last whorl with the lip very widely expanded, seven-clawed, columella callous, smooth, interior of the aperture smooth; whitish, but little stained with brown, columella and interior of the aperture whitish flesh-colour.

Strombus radix bryoniæ, Chemnitz, Conch. Cab. vol. x. p. 227. pl. 159. f. 1512-15.

Strombus bryonia, Gmelin.

Eadem var. *Pterocera Seba*, Valenciennes.

Hab. Society Islands; Cuming.

The spire of this, the largest species of the genus, is sometimes acuminate, sometimes flatly truncated. M. Valenciennes and M. Kiener regard these varieties as distinct species.





PTEROCERA.

PLATE II.

Species 2. (Mus. Cuming.)

PTEROCERA CHIRAGRA. *Pter. testâ ovalo-oblongâ, spirâ breviusculâ, acuminatâ, anfractibus striis elevatis regulariter cingulatis, superne concavis, deinde nodatis, anfractu ultimo costis tuberosis cingulato, hexadactylo, dactylis curvatis, longiusculis, latè expansis, columellâ subcorrugatâ: albidâ, castaneo-fusco undique marmoratâ et variegatâ, columellâ et aperture fauce roseo-carneis.*

THE GOUTY PTEROCERA. Shell ovately oblong, spire rather short, acuminate, whorls encircled with regular raised striae, concave round the upper part, then

noded, last whorl encircled with tuberos ribs, six-clawed, claws curved, rather long, widely spread, columella faintly wrinkled; whitish, marbled and variegated throughout with chestnut-red, columella and interior of the aperture pinkish flesh-colour.

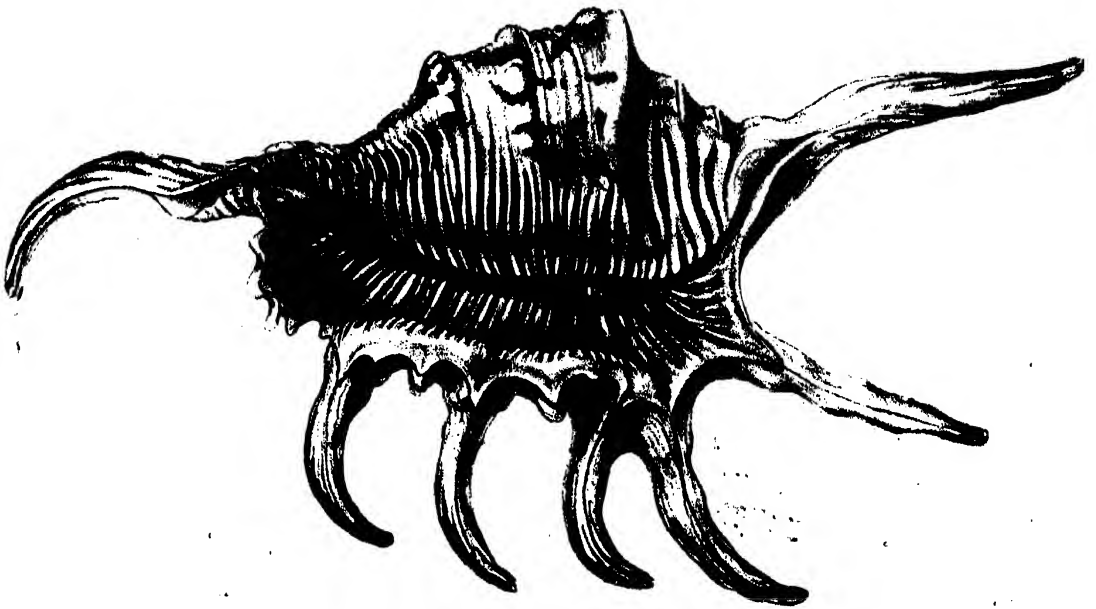
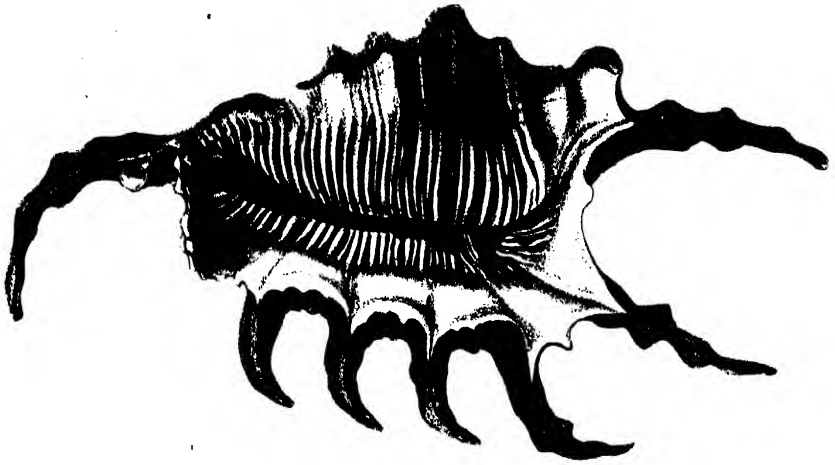
Strombus chiragra, Linnaeus, Syst. Nat. (12th edit.) p. 1207.

Pterocera chiragra, Lamarck.

Hab. Island of Timor, &c., Eastern Seas.

This well-known species is chiefly remarkable for the widely-expanded, star-like arrangement of the claws.

February, 1851.



PTEROCERA.

PLATE III.

Species 3. (MRS. CUMING.)

PTEROCERA SCORPIUS. *Pter. testā ovato-oblongā, spirā breviusculā, apice acutā, anfractibus striis subtilibus elevatis cingulatis, supernè plano-declivibus, ad angulum acutis, compressè nodatis, anfractu ultimo costis tuberosis cingulato, heptadactylo, dactylis nodatis, lateralibus brevibus, curvatis, antico elongato, curvato, columellā et aperturæ fauce densè et fortiter corrugatis, labro anticè crenato; albidā, castaneo-fusco sparsim maculatā, columellā et aperturæ fauce roseo-carneis, intensè violaceo linctis, rugis albis.*

THE SCORPION PTEROCERA. Shell ovately oblong, spire rather short, apex sharp, whorls encircled with fine raised striae, flatly slanting round the upper part, sharp at the angle, compressly noduled, last whorl encircled with tuberculous ribs, seven-clawed, claws noduled, side claws short, curved, front claw long, curved, columella and interior of the aperture densely and strongly wrinkled, lip crenated in front; whitish, sparingly blotched with chestnut-brown, columella and interior of the aperture pinkish-flesh, stained with very deep violet, upon which the wrinkles are white.

Strombus scorpius, Linnaeus, Syst. Nat. (12th edit.) p. 1208.

Pterocera scorpio, Lamarck.

Pterocera nodosa, Swainson.

Hab. Philippine Islands (on the reefs at low water); Cuming.

Well distinguished by its sharply noduled claws, and intense violet colouring internally.

Species 4. (MRS. CUMING.)

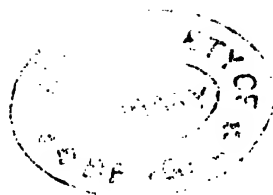
PTEROCERA PSEUDO-SCORPIO. *Pter. testā ovato-oblongā, spirā breviusculā, apice acutā, anfractibus striis subtilibus elevatis cingulatis, supernè plano-declivibus, ad angulum acutis et compressè nodatis, anfractu ultimo costis tuberosis cingulato, heptadactylo, dactylis obsolete nodatis, lateralibus curvatis, duobus approximatis, dactylo postico longiusculo, labro anticè crenato, columellā et aperturæ fauce densè et fortiter corrugatis; albidā, castaneo-fusco marmoratā, columellā et aperturæ fauce intensè fusco-purpureis, rugis albis.*

THE FALSE-SCORPION PTEROCERA. Shell ovately oblong, spire rather short, sharp at the apex, whorls encircled with fine raised striae, flatly slanting round the upper part, sharp and compressly noduled at the angle, last whorl encircled with tuberculous ribs, seven-clawed, claws obsolete noduled, side claws curved, the two uppermost of the side claws approximating each other, posterior claw rather long, lip crenated in front, columella and interior of the aperture densely and strongly wrinkled; whitish, marbled with chestnut-brown, columella and interior of the aperture deep brownish-purple, wrinkles white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 674.

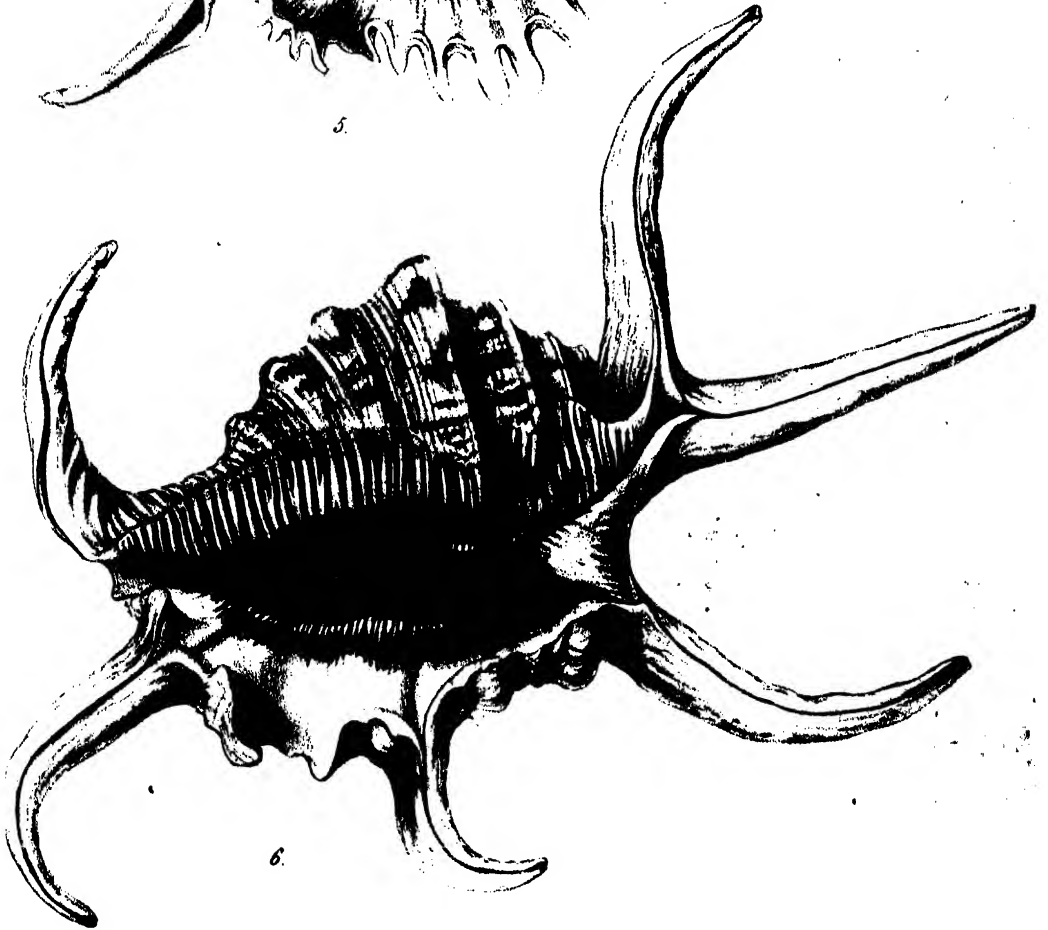
Hab. Zanzibar, East Africa.

It is extremely doubtful whether this is anything more than a local variety of the foregoing species. It is uniformly of larger size, with the claws more prolonged and less noduled. The hinder claw is especially elongated, and the two hinder side-claws are approximated both in Mr. Cuming's specimen and that in the British Museum.





5.



6.

PTEROCERA.

PLATE IV.

Species 5. (Mus. Cuming.)

PTEROCERA MULTIPES. *Pter. testā ovato-oblongā, spirā acuminatā, anfractibus subtilissimè striatis, supernè angulatis, ad angulum nodatis, nodis compressis, gradatim majoribus, anfractu ultimo nodis peramplis, infra lirato, liris irregularibus, partim nodatis, columellā callosā, vix corrugatā, labro expanso, decadactylo, dactylis subplanatis, postico bi-trifido, aperturæ fauce fortiter et creberrimè sulcatā; albidā, aurantio-fusco conspicuè maculatā et vittatā, aperturæ fauce albā, in profundo intensè rufescente-violaceo tinctā, columellā et labri margine aurantio-tinctis.*

THE MANY-FOOTED PTEROCERA. Shell ovately oblong, spire acuminate, whorls very finely striated, angled round the upper part, noded at the angle, nodules compressed, gradually larger, last whorl with the nodules very large, ridged below, ridges irregular, partially noded, columella callous, scarcely wrinkled, lip expanded, ten-clawed, claws rather flattened, the posterior claw bifid or trifid, interior of the aperture strongly and very closely grooved; whitish, conspicuously spotted and filleted with light orange-brown, interior of the aperture white, in the depth deeply stained with reddish-violet, columella and border of the lip tinged with orange.

Strombus multipes, Chemnitz, Conch. Cab. vol. x. p. 216. pl. 157. f. 1494-5.

Pterocera multipes, Deshayes.

Pterocera millipeda, Lamarck.

Pterocera violacea, Swainson.

Hab. East coast of Africa.

This very delicate and pretty species may readily be distinguished from *P. millipeda*, with which it is confounded by Lamarck and Kiener.

Species 6. (Mus. Cuming.)

PTEROCERA RUGOSA. *Pter. ovato-oblongā, spirā acuminatā, anfractibus undique subtiliter striatis, supernè concavis, deinde angulatis, ad angulum obsolete nodatis, anfractu ultimo costis nodatis cingulato, nodis peramplis, hexadactylo, dactylis longiusculis, curvatis, latè expansis, columellā undique fortiter rugosā, aperturæ fauce subtiliter corrugatā; albidā, rufescente-fusco maculatā, columellā et aperturæ fauce intensè purpureis, rugis albis.*

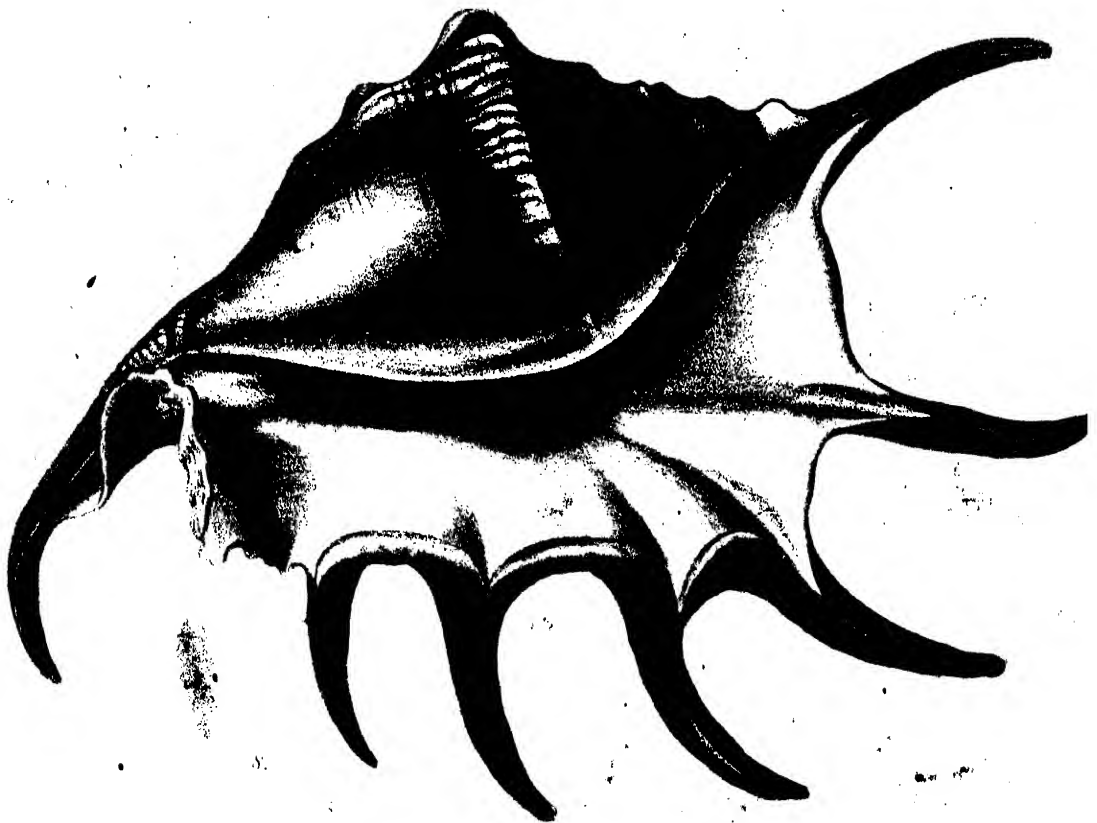
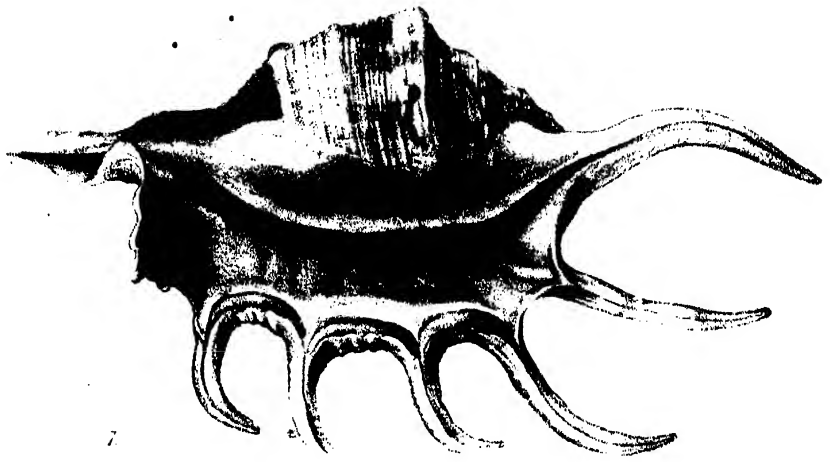
THE WRINKLED PTEROCERA. Shell ovately oblong, spire acuminate, whorls finely striated throughout, concave round the upper part, then angled, obsoletely noded at the angle, last whorl encircled with noded ribs, nodules very large, six-clawed, claws rather long, curved, broadly expanded, columella strongly wrinkled throughout, interior of the aperture finely wrinkled; whitish, spotted with reddish-brown, columella and interior of the aperture very dark purple, with the wrinkles white.

SOWERBY, Thesaurus Conch. Part 2. pl. 11. f. 9, 10.

Hab. Society Islands; Cuming.

Constantly distinguished from *P. chiragra*, with which it has been confounded, by its deep purple and white wrinkled columella.





PTEROCERA.

PLATE V.

Species 7. (Mus. Cuming.)

PTEROCERA AURANTIA. *Pter. testā ovalī, spirā acuminatā, anfractibus subtiliter striatis, supernè concavo-declinibus, anfractu ultimo costis tuberculatis cingulato, heptadactylo, dactylis curvatis, lateralibus breviusculis, cæteris prælongis, columellā callosā, lævigatā, aperturæ fauce lævigatā; albidā, rufescente-fusco tinctā et maculatā, columellā et aperturæ fauce intensè aurantiis.*

THE ORANGE PTEROCERA. Shell ovate, spire acuminate, whorls finely striated, concavely slanting round the upper part, last whorl encircled with tubercled ribs, seven-clawed, claws curved, side claws rather short, the rest very long, columella callous, smooth, interior of the aperture smooth; whitish, stained and spotted with reddish-orange, columella and interior of the aperture very deep orange.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. ix. p. 675.
Hab. Philippine Islands; Cuming.

This species is well distinguished from all others by its slender claws and deep orange colouring.

Species 8. (Mus. Brit.)

PTEROCERA LAMBIS. *Pter. testā ovato-oblongā, spirā acuminatā, anfractibus subtiliter striatis, supernè concavis, ad angulum nodatis, anfractu ultimo fortiter tuberculatis, heptadactylo, dactylis nunc breviusculis, nunc elongatis, columellā et aperturæ fauce lævigatis; albidā, rufescente- aut nigro-fusco marmoratā, columellā et aperturæ fauce pallidā carneolis.*

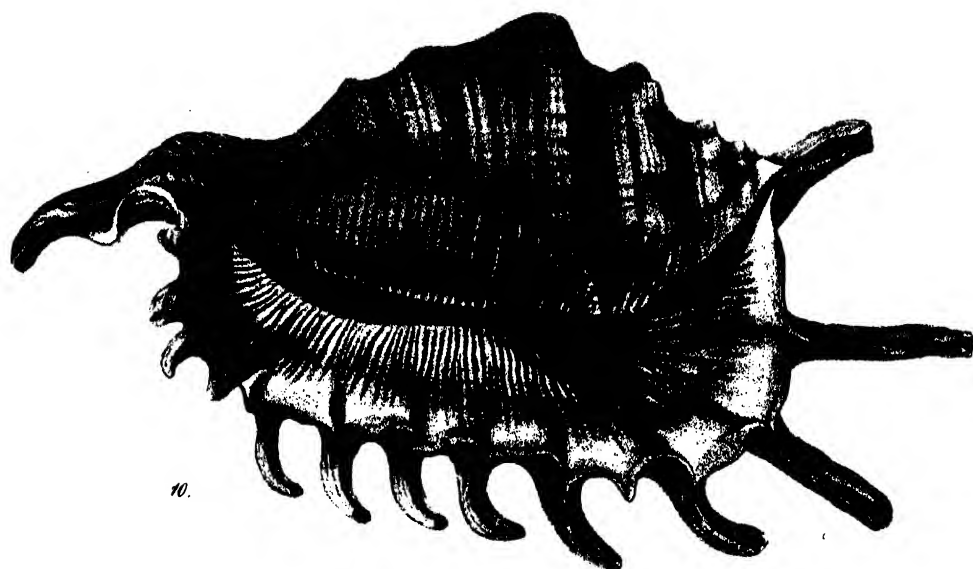
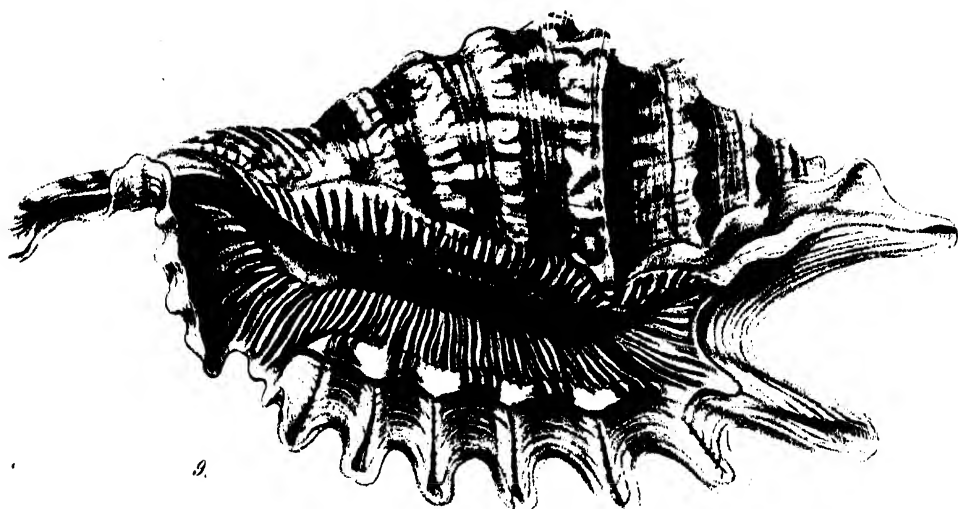
THE SPIDER PTEROCERA. Shell ovately oblong, spire acuminate, whorls finely striated, concave round the upper part, noded at the angle, last whorl strongly tubercled, seven-fingered, fingers sometimes rather short, sometimes long, columella and interior of the aperture smooth; whitish, marbled with reddish or black-brown, columella and interior of the aperture pale flesh-colour.

Strombus lambis, Linnaeus, *Syst. Nat.* (12th edit.) p. 1208.
Hab. Ceylon and Philippine Islands.

This well-known species inhabits the Eastern Seas in great abundance, of various sizes, rarely exceeding that of the specimen here figured.

February, 1851.





PTEROCERA.

PLATE VI.

Species 9. (Mus. Cuming.)

PTEROCERA ELONGATA. *Pter. testâ elongato-ovatâ, spirâ acuminato-turritâ, anfractibus undique striatis, supernè valdè concavis, ad angulum compressè nodatis, anfractu ultimo nonadactylo, columellâ callosâ, fortiter corrugatâ, labro plano-incrassato, dactylis brevibus, planatis, dactylo postico plerumque bifurcato, aperturæ fauce densè et fortiter corrugatâ; albidâ, aurantio-fusco profusè marmoratâ, columellâ et aperturæ fauce intensè purpureis, rugis albis, fauce in profundo vividè crocèâ.*

THE ELONGATED PTEROCERA. Shell elongately ovate, spire acuminately turreted, whorls striated throughout, very concave round the upper part, compressly noded at the angle, last whorl nine-clawed, columella callous, strongly wrinkled, lip flatly thickened, claws short, flattened, posterior claw generally bifurcate, interior of the aperture densely and strongly wrinkled; whitish, profusely marbled with orange-brown, columella and interior of the aperture deep purple, with the wrinkles white, depth of interior bright saffron-yellow.

SWAINSON, Exotic Conch. App. p. 32.

Pterocera novem dactylis instructus, Chemnitz.

Pterocera millepeda, pars, Lamarck.

Pterocera crocea, Sowerby.

Hab. — ?

The principal characteristic of this species is the thickened festooned growth of the side claws, and the saffron-yellow colouring of the shell in its far interior. It

was first described and figured by Chemnitz, but he failed to name it in accordance with the recognized form of nomenclature founded by Linnaeus.

Species 10. (Mus. Cuming.)

PTEROCERA MILLEPEDA. *Pter. testâ ovato-oblongâ, spirâ subabbreviatâ, anfractibus undique striatis, supernè concavis, ad angulum fortiter nodatis, nodis limbidiusculis, anfractu ultimo tuberculato, decadactylo, columellâ et aperturæ fauce undique superficialiter rugosis, dactylis lateralibus brevibus, curvatis; albidâ, aurantio-fusco tinctâ et sparsim maculatâ, columellâ et aperturæ fauce fusco-purpurascensibus, rugis albicantibus.*

THE THOUSAND-FOOTED PTEROCERA. Shell ovately oblong, spire somewhat abbreviated, whorls striated throughout, concave round the upper part, strongly noded at the angle, nodules rather swollen, last whorl tubercled, ten-clawed, columella and interior of the aperture superficially wrinkled throughout, lateral claws short, curved; whitish, stained and partially spotted with orange-brown, columella and interior of the aperture smoky-purple, wrinkles whitish.

Strombus millepeda, Linnaeus, Syst. Nat. (12th edit.) p. 1208.

Pterocera millepeda, pars, Lamarck.

Hab. Philippine Islands (on the reefs at low water); Cuming.

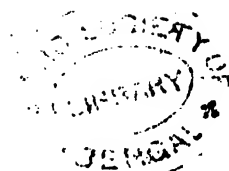
The *P. multipes*, *elongata*, and *millepeda*, were all confounded by Lamarck under one species.

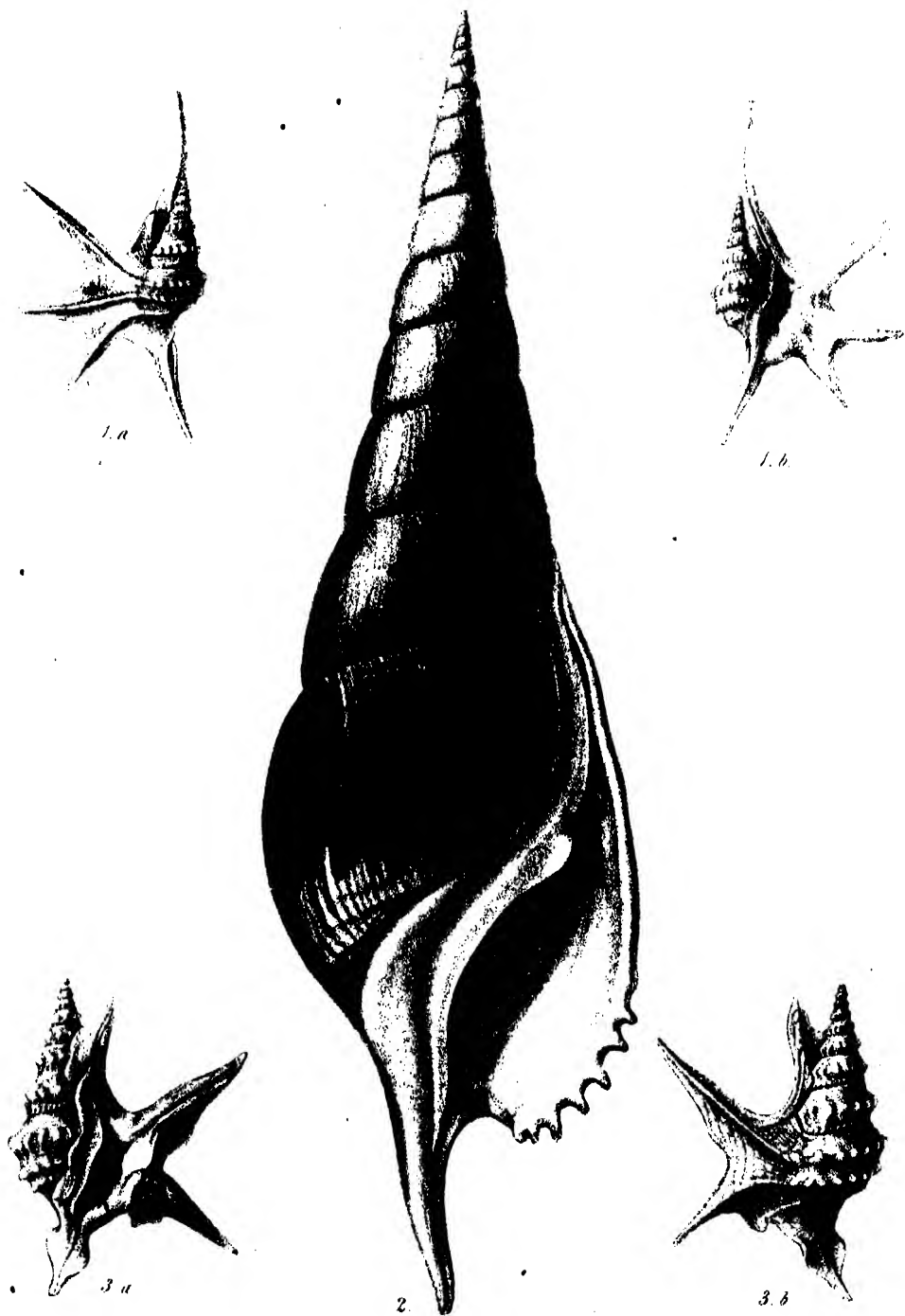
MONOGRAPH
OF THE GENUS
ROSTELLARIA.

Lives there the man whose universal eye
Has swept at once the unbounded scheme of things,
Marked their dependence so, and firm accord,
As with unfaltering accent to conclude
That this availeth nought?—*Thomson.*

.

!





ROSTELLARIA.

PLATE I.

Genus ROSTELLARIA, Lamarck.

Testa fusiformis, basi in canalem interdum gracillimum et elongatum desinens, spirā valdē acuminatā, anfractibus nunc levibus, nunc costatis aut sulcatis, labro muricato-dentato, supernè canaliculato-producto, interdum expanso et digitato. Operculum corneum, oblongum, angustum, medio costatum.

Shell fusiform, ending at the base in a canal, which is sometimes very long and slender, spire very much acuminate, whorls now smooth, now ribbed or grooved, lip prickly-dentate, canaliculately produced at the upper part, sometimes expanded and digitated. Operculum horny, oblong, narrow, ribbed down the middle.

The genus *Rostellaria*, which is here adopted provisionally in its Lamarckian form, under an impression that the species which have been detached from it are not yet satisfactorily understood, comprises three distinct groups. The first, which may be regarded as the type of the genus, includes *R. curvirostris*, *curta*, *fusus*, and *Povisii*. The shells are large and fusiform, with little sculpture, and have the lip conspicuously prickly dentated, and produced more or less over the penultimate whorl into a channel. The second form is represented by two species, *R. cancellata* and *crispata*, of very much smaller dimensions, in which the shell is of a different substance, and elaborately sculptured like the small Tritons. In these the lip is not dentated; it still rises up into a canal, after the manner of the typical *Rostellaria*, extending in one of the species nearly to the apex. The third form included under *Rostellaria* by Lamarck, comprises those species which have been separated by common consent, on account of a difference in the animal, under the title of *Aporrhais*. These are *R. pes-pelecani*, *pes-carbonis*, and *occidentalis*. In the first two species the lip is expanded into very prominent claws, in the last it is widely expanded but not clawed.

Professor E. Forbes proposes to associate the genus *Aporrhais* along with *Cerithium*, in a family, *Cerithiade*, owing to certain corresponding features of the animal. This family he describes as being closely allied on the one hand to the *Turritellide*, and on the other to the *Scalariade*. It is not intended here to differ from so high an authority on living mollusca, not having adequate data for so doing, but it may be stated that all the observations derivable from the form, growth, and substance of the shells point to a different conclusion. The relationship

between *Aporrhais* and *Cerithium* he derives from a similarity between the animals, but it is very difficult to understand how two genera, whose shells in all the species are of so uniform and distinct a type, can be constructed by a similar animal. It is a remarkable feature in the shell of *Aporrhais* and of the family *Alata*, that a sudden departure from the spiral plan of convolution is given to the shell on arriving at maturity. This is not so in *Cerithium*, nor in any other genus of mollusks. Professor Forbes remarks that "the affinities of *Aporrhais* and *Cerithium* are very evident when we look at the young shells of the former." The same may be said of *Strombus* and *Conus*. The shells of many genera, far removed from each other, agree in their plan of convolution up to a certain age, yet differ widely before reaching maturity. The relationship between *Aporrhais* and the *Scalariade* is said to be better traced in fossil than in living examples. In having recourse to the shell for this affinity, it should be borne in mind that the adult shell of *Scalaria*, throughout, a hundred species, is of the simplest tubular form, and what is probably of more importance in reference to the animal, of a peculiar semi-transparent substance, mostly colourless. So far as regards the shell, *Scalaria* is peculiarly distinct in all respects from *Aporrhais*.

The typical species of *Rostellaria* inhabit the Red and China Seas, the second group is from the Philippine Islands, and the third inhabits the coasts of Europe and Newfoundland.

Species 1. (Mus. Canning.)

ROSTELLARIA PES-CARBONIS. *Rost. testā fusiformi, spirā acuminato-turritā, anfractibus transversim undiquē conspicuē minutē striatis, medio lamidis et eximie oblique plicatis, anfractu ultimo bi-tricarinato, carinis minutē plicato-nodatis, in alam acutè quinque-dactylum latè expanso; semipellucido-albā, fusciscente partim lineatā.*

THE CORMORANT'S FOOT ROSTELLARIA. Shell fusiform, spire acuminately turreted, whorls transversely conspicuously minutely striated throughout, swollen and delicately obliquely plicated round the middle, last whorl two-three-keeled, the keels being minutely plicately noduled, broadly expanded into a sharp five-clawed wing; semi-transparent white, partially tinged with light brown.

Aporrhais pes-carbonis, Brongniart, Torr. du Vincent, p. 75.

pl. 4. f. 2.

Rostellaria Serresiana, Michaud.

Rostellaria pes-pellicani, var., Kiener.

Chenopus pes-carbonis, Deshayes.

Chenopus Serresianus, Philippi.

Hab. Zetland (at a depth of from seventy to a hundred fathoms); M'Andrew.

Distinguished mainly from *R. pes-pelecani* by its more slender and delicate growth, and in having an additional claw.

Species 2. (Mus. Cuming.)

ROSTELLARIA CURVIROSTRIS. *Rost. testâ fusiformi-turritâ, obesâ, ponderosâ, spirâ valde acuminatâ, canali brevi, curvato, anfractibus subplanatis, paucis primis longitudinaliter costatis, cæteris levibus, epidermide crassiusculâ indutâ, columellâ arcuatâ, callosâ, labro sex-septemdentato, supernè conspicuè canaliculato-producto; fulvo-fucescente, columellâ et aperturâ fauce albis.*

THE CURVED-BEAK ROSTELLARIA. Shell fusiformly turreted, stout, heavy, spire very much acuminated, canal short, curved, whorls rather flattened, a few early whorls longitudinally ribbed, the rest smooth, covered with a rather thick epidermis, columella arched, callous, lip six- to seven-dentate, conspicuously canaliculately produced above; light fulvous-brown, columella and interior of the aperture white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 654.

Rostellaria brevirostra, Schumacher.

Rostellaria fusus, Sowerby.

Hab. Red Sea.

This well-known species, which is found in great abundance, is well characterized by its stout growth and curved canal.

Species 3. (Mus. Cuming.)

ROSTELLARIA PES-PELECANI. *Rost. testâ fusiformi, spirâ acuminato-turritâ, anfractibus transversim tenuistriatis, medio angulatis, ad angulum obliquè plicato-nodatis, suturis marginatis, anfractu ultimo tricarinato, carinis duabus centralibus prominentibus, obliquè plicato-nodatis, in alam quadridactylam expanso, dactylis incrassatis, acuminatis; albidd, pallidè fulvo tinctâ.*

THE PELICAN'S FOOT ROSTELLARIA. Shell fusiform, spire acuminate-turreted, whorls transversely finely striated, angled in the middle, obliquely plicately noduled at the angle, sutures margined, last whorl three-keeled, the two central keels being prominent and obliquely noduled, expanded into a four-clawed wing, claws thickened, sharp-pointed; whitish, tinged with light fulvous colour.

Strombus pes-pelecani, Linnaeus, Syst. Nat. (12th edit.) p. 1207.

Rostellaria pes-pellicani, Lamarck.

Aporrhais quadrifidus, Da Costa.

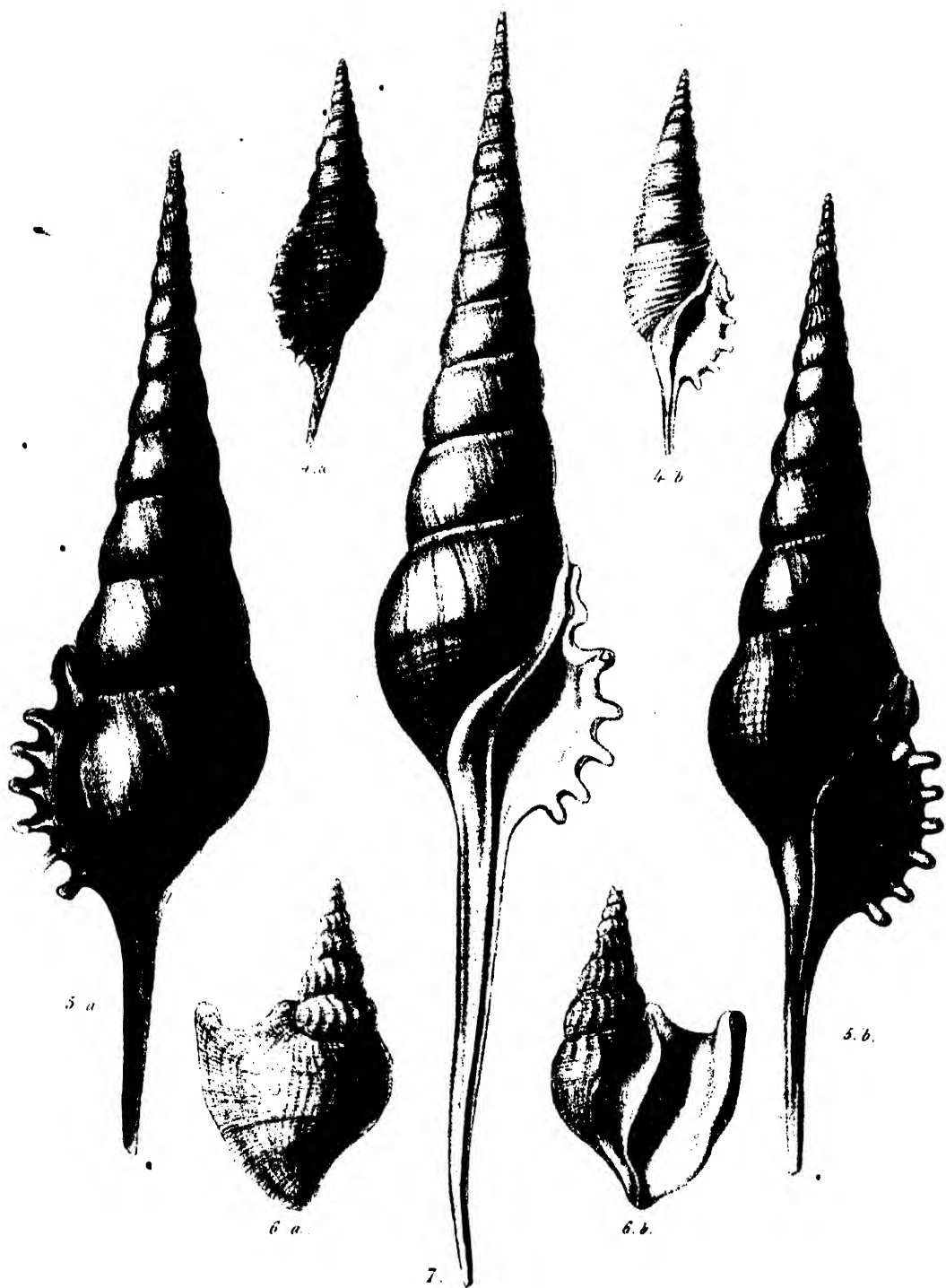
Tritonium pes-pellicani, Müller.

Chenopus pes-pelecani, Philippi.

Aporrhais pes-pelecani, Swainson.

Hab. Coasts of Europe (from a depth of from four to a hundred fathoms); Forbes.

This species differs mainly from *R. pes-carbonis* in its more thickened solid growth, and in having one claw less.



ROSTELLARIA.

PLATE II.

Species 4. (Mus. Cuming.)

ROSTELLARIA POVISII. *Rost. testâ elongato-fusiformi, solidiusculâ, spirâ valdè acuminatâ, anfractibus plano-rotundatis, undique spiraliter creberrimè sulcatis, sulcis striis densè cancellatis, columellâ callosâ, canali breviusculo, gracili, labro incrassato, quinque-dentato, dentibus muricatis, superne vix canaliculato-producto, aperturâ fauce contractâ; stramineo-fuscescente, columellâ labroque albis.*

POWIS'S ROSTELLARIA. Shell elongately fusiform, rather solid, spire very much acuminate, whorls flatly rounded, spirally very closely grooved, grooves densely cancellated with striae, columella callous, canal rather short, slender, lip thickened, five-toothed, teeth prickly, scarcely canaliculately produced at the upper part, interior of the aperture contracted; straw-tinted brown, lip and columella white.

PETIT, *Magasin de Zoologie*, 1842, pl. 53.

Hab. China.

This interesting little species is very distinctly characterized in all respects. From the larger fusiform species of the genus it differs essentially in size and in being elaborately spirally grooved throughout.

Species 5. (Fig. a, b, and Fig. 7.)

ROSTELLARIA FUSUS. *Rost. testâ gracillimi-fusiformi, spirâ valdè acuminatâ, anfractibus primis paucis convexis, longitudinaliter creberrimè tenuè costatis, cæteris levibus, superne concavo-declivibus, deinde rotundatis, anfractu ultimo basi sulcato, columellâ arcuatâ, callosâ, canali gracili, prælongo, aperturâ parviusculâ, labro quinque- ad sex-dentato, dentibus prominentibus, labro superne calloso, brevissimè canaliculato-producto et crispato; fulvo-aurantiâ, labro interdum purpureo-nigricante tincto.*

THE SPINDLE ROSTELLARIA. Shell very slenderly fusiform, spire very much acuminate, the first few whorls convex and longitudinally very closely finely ribbed, the rest smooth, concavely slanting round the upper part, then rounded, last whorl grooved at the base, columella arched, callous, canal slender, very long, aperture rather small, lip five- to six-toothed, teeth prominent, lip callous at the upper part, very shortly canaliculately produced and curled; fulvous-orange, lip sometimes stained with blackish-purple.

Strombus fusus, Linnaeus, *Syst. Nat.* (12th edit.) p. 1207.

Rostellaria fusus, Deshayes.

Strombus clavus, Gmelin.

Strombus unicornis, Dillwyn.

Rostellaria subultra, Schumacher.

Rostellaria rectirostris, Lamarck.

Hab. China.

This elegantly-formed shell is of very rare occurrence in fine state, and has always been esteemed a choice species by the collector. Sir E. Belcher collected some thirty or forty specimens in the China Seas during the voyage of the *Samarang*, but they were all dead and more or less broken. The variety represented at Fig. 5, with a dark purple-black lip, is reported to have been collected at the Red Sea, and at Kurrachee, mouth of the Indus. It does not appear, on examination, to differ in any material character from the type of the species represented at Fig. 7. The canal of this purple-stained specimen is evidently broken at the extremity.

Species 6. (Mus. Cuming.)

ROSTELLARIA OCCIDENTALIS. *Rost. testâ fusiformi, spirâ turritâ, anfractibus convexis, primis paucis levibus, cæteris concentricè plicato-costatis, anfractu ultimo tumidiusculo, transversim densè striato, in alam brevem simplicem latè expanso, columellâ arcuatâ, callosâ, aperturâ subcontractâ; cærulescente-albâ, pallidè ferrugineo-tinctâ.*

THE WESTERN ROSTELLARIA. Shell fusiform, spire turrit, whorls convex, the first few smooth, the rest concentrically plicately ribbed, last whorl rather swollen, transversely densely striated, broadly expanded into a short simple wing, columella arched, callous, aperture somewhat contracted; bluish-white, tinged with rust.

BECK, *Magasin de Zoologie*, 1836, pl. 72.

Hab. Banks of Newfoundland (found mostly in the stomach of fishes); Gould.

This interesting shell is intermediate in its characters between *Aporrhais* (*R. pes-pelecani*) and *Strombus*, and very much adds to the perplexity arising in the mind of the conchologist, out of the removal of the first-named genus, by Professor E. Forbes, to the family of *Cerithiade*. It is to be hoped that the animal of this species may soon become known, and throw some light on this seeming anomaly.



8. a.



8. b.



9.



10. a.



10. b.

ROSTELLARIA.

PLA

Species 8. (Mus. Cuming.)

ROSTELLARIA CRISPATA. *Rost. testâ fusiformi, crassiusculâ, spirâ acutâ, anfractibus rotundatis, bicaricosis, longitudinaliter crebricostatis, interstitiis liris parvis numerosis nitidè cancellatis, columellâ rectâ, callosâ, labro valdè incrassato, cancellato, supernè eleganter crispato, aperturâ parvâ; glauco-grisâ, aperturæ fauce castaneâ, columellâ labroque albidis.*

THE CURLED ROSTELLARIA. Shell fusiform, rather thick, spire sharp, whorls rounded, two-varicose, longitudinally closely ribbed, interstices neatly cancellated with numerous small ridges, columella straight, callous, lip very much thickened, cancellated, elegantly curled at the upper part, aperture small: glaucous grey, interior of the aperture chestnut, lip and columella whitish.

Strombus crispatus, Sowerby, Thesaurus Conch. p. 26. pl. 8. f. 62, 63.

Rostellaria crispata, Kiener.

Hab. Philippine Islands; Cuming, Belcher.

This interesting little species, very closely allied to *R. cancellata* in form and sculpture, is remarkably distinguished by the peculiar manner in which the sinuous production of the lip is suddenly curled backwards.

Species 9. (Mus. Cuming.)

ROSTELLARIA CURTA. *Rost. testâ fusiformi-turritâ, spirâ valdè acuminatâ, canali recto, anfractibus subplanatis, plicis primis longitudinaliter costatis, cæteris levibus, columellâ callosâ, labro quadri-vel quinque-dentato, supernè canaliculato-producto, canali breviusculo, subrecurso; fulvo-fuscescente, fasciâ latiusculâ pallidè castaneâ infra suturas, columellâ et aperturæ fauce albis.*

THE SHORT ROSTELLARIA. Shell fusiformly turreted, spire very much acuminate, canal straight, whorls rather flattened, the first few whorls longitudinally ribbed, the rest smooth, columella callous, lip four-to five-dentate, canaliculately produced at the upper part, the canal being rather short and curved backwards; light fulvous-brown, with a rather broad pale

chestnut band beneath the sutures, columella and interior of the aperture white.

SOWERBY, Pro. Zool. Soc. 1842.

Hab. — ?

The form of this shell is certainly distinct from any variety that I remember to have seen of *R. curricostis*, from which it differs principally in the canal being straight. It is impossible to characterize the length of the canal, as it appears to have been filed at the extremity. The species has not been confirmed by the discovery of a second specimen.

Species 10. (Mus. Cuming.)

ROSTELLARIA CANCELLATA. *Rost. testâ fusiformi, crassiusculâ, spirâ acutâ, anfractibus subrotundatis, bicaricosis, longitudinaliter crebricostatis, interstitiis liris parvis numerosis nitidè cancellatis, columellâ callosâ, leviter recurvâ, labro incrassato, supernè apicem versus gracilè canaliculato-producto; glaucescente-fuscâ, maculis parvis rubidis fasciatim lineatâ, columellâ labroque albis, aperturæ fauce pallidè castaneâ.*

THE CANCELLATED ROSTELLARIA. Shell fusiform, rather thick, spire sharp, whorls somewhat rounded, bivari-cose, longitudinally closely ribbed, interstices neatly cancellated with numerous small ridges, columella callous, slightly recurved, lip thickened, slenderly canaliculately produced at the upper part towards the apex; light glaucous-brown, stained with bands of small red spots, lip and columella white, interior of the aperture light chestnut.

Strombus cancellatus, Lamarek, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 710.

Rostellaria cancellata, Kiener.

Strombus fissurella, Sowerby.

Hab. Philippine Islands; Cuming, Belcher.

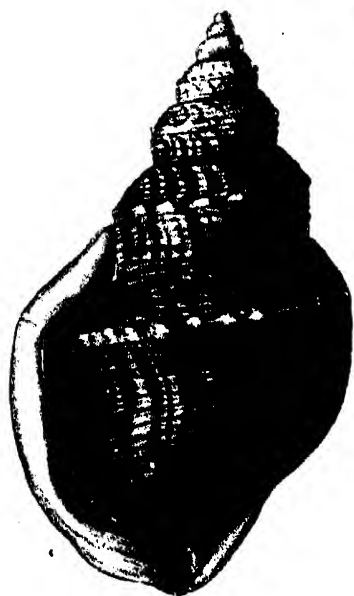
This species is more attenuated and compressed than *S. crispatus*, and the channelled production of the lip, instead of being suddenly curled backwards on the penultimate whorl, is continued towards the apex over three or four whorls.

MONOGRAPH
OF THE GENUS
STRUTHIOLARIA.

Search Nature's depths, and view her boundless store,
The secret cause in tuneful numbers sing.—*Yalden.*



3.



4. a



4. b

STRUTHIOLARIA.

PLATE I.

Genus STRUTHIOLARIA, Lamarck.

Testa oblongo-ovalis, spirā exsertā, anfractibus supernè plus minus nodoso-angulatis, columellā valdè callosā, excavatā, subtortuosā, basi obtusè truncatā, labro plerumque incrassato, peculiariter sinuato.

Shell oblong-oval, spire exserted, whorls more or less nodosely angled round the upper part, columella very callous, excavated, slightly twisted, obtusely truncated at the base, lip generally thickened, peculiarly sinuated.

The genus *Struthiolaria*, which is intimately allied with *Strombus* and *Rostellaria*, consists of four species only. They are limited to particular localities, and have been long known. Three inhabiting New Zealand, were named and figured by Martyn in 1784, and the fourth, from New Holland, was described by Lamarck. Owing to the difficulty of getting access to the work of the English conchologist, a great deal of confusion has arisen in the nomenclature of this genus. Chemnitz, however, had a copy of the work, and it is to be regretted that Martyn's specific names were not followed in the Conchylien Cabinet.

Species 1. (Mus. Cuming.)

STRUTHIOLARIA AUSTRALIS. *Struth. testā ovalē, ventricosā, spirā turrītā, suturis interdum simplicibus, interdum canaliculatis aut plano-excavatis, anfractibus transversim striatis et superficialiter sulcatis, supernè leviter declivibus, ad angulum minutè nodulatis, nodulis interdum evanidis; albidā, fuscescente tinctā et pallidè strigatā, columellā et labri limbo aurantiis.*

THE AUSTRALIAN STRUTHIOLARIA. Shell ovate, ventricose, spire turreted, sutures sometimes simple, sometimes channelled or flatly excavated, whorls transversely striated and superficially grooved, gently slanting round the upper part, minutely noduled at the angle, nodules sometimes obsolete; whitish, stained and faintly streaked with light brown, columella and edge of the lip tinged with orange.

Murex Australis, Gmelin, Syst. Nat. p. 3542.

Struthiolaria crenulata, Lamarck.

Struthiolaria inermis, Sowerby.

Struthiolaria vermis, Deshayes.

Hab. Australia.

This species, first described by Gmelin, and the only one from Australia, is not the *Buccinum vermis* of Martyn, as supposed by M. Deshayes. It is uniformly of smaller size, the nodules are closer together, and in specimens at all larger than that in the accompanying plate, the nodules are generally obsolete. The shell figured by Martyn is much larger than the largest individual known of the species under consideration; it is, without doubt, an immature specimen of Mr. Sowerby's *Struthiolaria gigas*. In *S. crenulata* the sutures of the whorls are sometimes broadly channelled throughout.

Species 2. (Mus. Cuming.)

STRUTHIOLARIA SCUTULATA. *Struth. testā orato-conicā, crassā, ponderosā, spirā exsertā, suturis valdè callosis, anfractibus supernè declivibus, deinde obtusè bicarinatis, apicem versus minutè nodatis, columellā callosā, aperturā parvā, labro simplici; flavido-spadiceā, lineis tenuibus fuscis longitudinaliter flexuoso-strigatā, callositate suturali albā.*

THE COBWEB-MARKED STRUTHIOLARIA. Shell ovately conical, thick, ponderous, spire exserted, sutures very callous, whorls slanting round the upper part, then obscurely two-keeled, minutely noduled towards the apex, columella callous, aperture small, lip simple; yellowish fawn-colour, longitudinally flexuously streaked with fine brown lines, sutural callosity white.

Buccinum scutulatum, Martyn, Universal Conchologist, vol. ii. pl. 55.

Struthiolaria scutulata, Deshayes.

Struthiolaria oblita, Sowerby.

Hab. New Zealand.

Distinguished by its solid enamelled growth, and simple lip, and by the sutures of the spire being filled with callosity. The painting consists of numerous flexuous hair-lines. Chemnitz's figure of this species appears to be a copy of that of Martyn.

Species 3. (Mus. Cuming.)

STRUTHIOLARIA PAPULOSA. *Struth. testā pyramidalē, ovalē, spirā subturrītā, anfractibus undique tenuè et creberrimè sulcatis et striatis, supernè concavo-declivibus, acutè angulatis, ad angulum muricato-nodatis,*

STRUTHIOLARIA.—PLATE I.

ill longitudinaliter tenuè strigatâ.

THE PIMPLED STRUTHIOLARIA. Shell pyramidally ovate, spi. somewhat turreted, whorls finely and very closely grooved and striated throughout, concavely slanting round the upper part, sharply angled, prickly-noduled at the angle, lip and columella cal- lous; dirty fawn-colour, longitudinally finely streaked here and there with brown.

Buccinum papulosum, Martyn, Universal Conchologist, vol. ii. pl. 54.

Murex pes struthiocameli, Chemnitz.

Murex stramineus, Gmelin.

Struthiolaria nodulosa, Lamâreck.

Struthiolaria straminea, Sowerby.

Hab. New Zealand; W. Mantell.

This well-known species, the most abundant of the genus, is well distinguished by its numerous grooves and striæ, and by its prominent sharp nodules.

STRUTHIOLARIA VERMIS. *Struth. testâ pyramidalis-ovata, c. assiusculâ, spiræ suturis subcanaliculatis, anfractibus*

transversim striatis et sulcatis, striis alternatim majori- bus, subirregularibus, superne declivibus, viz angulatis, ad angulum nodatis, nodis parvis, subdistantibus, colu- mellâ labroque valdè incrassatis; sordide fulvâ, fusco pallidè strigatâ, nodis albidis.

THE WORM STRUTHIOLARIA. Shell pyramidally ovate, rather thick, sutures of the spire slightly channelled, whorls transversely striated and grooved, striæ alter- nately larger, rather irregular, slanting round the upper part, slightly angled, noduled at the angle, nodules small and rather distant, lip and columella very much thickened; dirty fulvous colour, faintly streaked with brown, nodules white.

Buccinum vermis, Martyn, Universal Conchologist, vol. ii. pl. 53.

Struthiolaria gigas, Sowerby.

Struthiolaria papulosa, Deshayes.

Tab. New Zealand.

THIS SPECIES differs principally from the more common *S. papulosa*, in being less sharply angled, and the nodules being smaller and more distant from each other, in the sutures being slightly channelled, in the striæ being alternately larger and smaller, and in the very slight thickening of the lip.

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